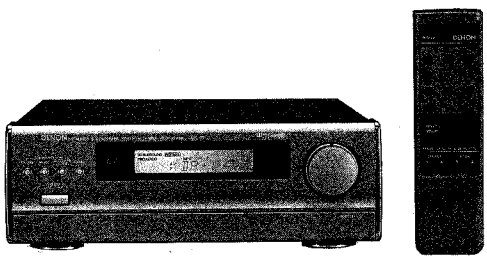
DENON

Hi-Fi AV Surround Amplifier

SERVICE MANUAL

MODEL AVC-77

AV SURROUND AMPLIFIER



CONTENTS

NIPPON COLUMBIA CO., LTD.

SPECIFICATIONS

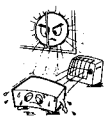
• **Audio section**	
Rated maximum output	CENTER (Center 1ch driven)
(All properties shown are	30 W (8 Ω/ohms, 1 kHz with 1.0% THD)
only for the power	REAR (rear 2ch driven)
amplifier stage.)	15 W + 15 W (8 Ω/ohms, 1 kHz with 1.0% THD)
Frequency response	40 Hz to 20 kHz ±3 dB
Rated input/input impedance	150 mV/47 kΩ/ohms
S/N ratio	90 dB
Speaker impedance	Center: 8 Ω/ohms
	Rear: 8 Ω/ohms
LINE Input sensitivity/impedance	150 mV/47 kΩ/ohms
• **Video section**	
Input and output level/impedance	1 Vp-p/75 Ω/ohms
Frequency response	2 Hz to 8 MHz +0, −3 dB
• **General**	
Power source	AC 230 V, 50 Hz
Power consumption	135 W
Maximum external dimensions	270 (W) × 96 (H) × 313 (D) mm
	(10-5/8" × 3-25/32" × 12-21/64")
Weight	4.7 kg (10 lbs 6 oz)
• **Remote control unit (RC-178)**	
Remote control system	Infrared pulse
Number of buttons	15
Power supply	Two DC 1.5V R6P/AA batteries
Maximum external dimensions	48 (W) × 175 (H) × 18 (D) mm
	(1-57/64" × 6-57/64" × 45/64")
Weight	120g (including batteries) (Approx. 4 oz)

* Maximum dimensions include controls, jacks, and covers.
(W) = width, (H) = height, (D) = depth

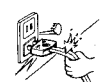
* Specifications are subject to change without notice.

1 INTRODUCTION / EINFÜHRUNG / INTRODUCTION

NOTE ON USE / HINWEISE ZUM GEBRAUCH / OBSERVATIONS RELATIVES A L'UTILISATION



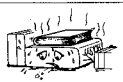
- Avoid high temperatures
  Allow for sufficient heat dispersion when installed on a rack.
- Vermeiden Sie hohe Temperaturen.
  Beachten Sie, daß eine ausreichend Luftzirkulation gewährleistet wird, wenn das Gerät auf ein Regal gestellt wird.
- Eviter des températures élevées.
  Tenir compte d'une dispersion de chaleur suffisante lors de l'installation sur une étagère.



- Handle the power cord carefully.
  Hold the plug when unplugging the cord.
- Gehen Sie vorsichtig mit dem Netzkabel um.
  Halten Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen.
- Manipuler le cordon d'alimentation avec précaution.
  Tenir la prise lors du débranchement du cordon.

- Keep the set free from moisture, water, and dust.
- Halten Sie das Gerät von Feuchtigkeit, Wasser und Staub fern.
- Protéger l'appareil contre l'humidité, l'eau et la poussière.

- Unplug the power cord when not using the set for long periods of time.
- Wenn das Gerät eine längere Zeit nicht verwendet werden soll, trennen Sie das Netzkabel vom Netzstecker.
- Débrancher le cordon d'alimentation lorsque l'appareil n'est pas utilisé pendant de longues périodes.



*(For sets with ventilation holes)

- Do not obstruct the ventilation holes.
- Die Belüftungsöffnungen dürfen nicht verdeckt werden.
- Ne pas obstruer les trous d'aération.

- Do not let foreign objects in the set.
- Keine fremden Gegenstände in das Gerät kommen lassen.
- Ne pas laisser des objets étrangers dans l'appareil.

- Do not let insecticides, benzene, and thinner come in contact with the set.
- Lassen Sie das Gerät nicht mit Insektiziden, Benzin oder Verdünnungsmitteln in Berührung kommen.
- Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil.

- Never disassemble or modify the set in any way.
- Versuchen Sie niemals das Gerät auseinander zu nehmen oder auf jegliche Art zu verändern.
- Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre.

SAFETY IMPORTANT

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

•NUR FÜR EUROPÄISCHE MODELLE

Konformitätserklärung

Die DENON Electronic GmbH
Halskestraße 32
40880 Ratingen

Erklärt als Hersteller/Importeur, daß das in dieser Bedienungsanleitung beschriebene Gerät den Technischen Vorschriften für Ton- und Fernseh-Rundfunkempfänger nach der Amtsblattverfügung 868/1989 (Amtsblatt des Bundesministers für Post und Telekommunikation vom 31. 8. 1989) entspricht.

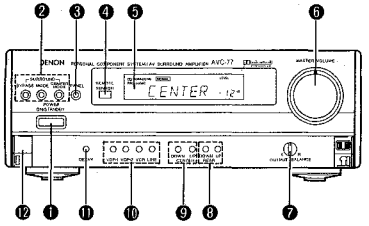
CAUTION / VORSICHT / ATTENTION

- If the system should smoke or produce strange smells, immediately set the power switch to the STANDBY position, unplug the power cord, and contact your store of purchase.
- Sollte das Gerät Rauch produzieren oder eigenartig riechen, stellen Sie den Netzschalter sofort auf die Position STANDBY (Bereitschaft), ziehen Sie den Netzstecker heraus und kontaktieren Sie Ihren Händler.
- Si de la fumée sort de la chaine ou des odeurs bizarres, placer l'interrupteur d'alimentation immédiatement sur la position de veille (STANDBY), débrancher le cordon d'alimentation et contacter le distributeur.

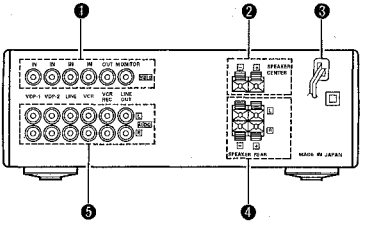
"SERIAL NO. _____
PLEASE RECORD UNIT SERIAL NUMBER ATTACHED TO THE REAR OF THE CABINET FOR FUTURE REFERENCE"

2 NAMES OF PARTS/BEZEICHNUNG DER TEILE/NOMENCLATURE

(Front Panel/Frontplatte/Panneau avant)



(Rear Panel/Rückseite/Panneau arrière)



FOR ENGLISH READERS

1. POWER button
2. SURROUND select button
3. PANEL button
4. REMOTE CONTROL SENSOR
5. MFD (Multi-function display)
6. MASTER VOLUME control
7. OUTPUT BALANCE control
8. REAR channel level button
9. CENTER channel level button
10. FUNCTION button
11. DELAY TIME button
12. Trap door

FOR ENGLISH READERS

1. VIDEO INPUT/OUTPUT jacks
2. CENTER channel speaker terminals
3. AC cord with plug
4. REAR channel speaker terminal
5. AUDIO INPUT/OUTPUT jacks

FÜR DEUTSCHE LESER

1. POWER-Taste (Netz)
2. SURROUND-Wahltaste (Surround)
3. PANEL-Taste (Panel)
4. REMOTE CONTROL SENSOR (Fernbedienungssensor)
5. MFD (Multi-Funktions-Display)
6. MASTER VOLUME-Regler (Hauptlautstärke)
7. OUTPUT BALANCE-Regler (Ausgangsbalance)
8. REAR-Taste (Pegel für hinteren Kanal)
9. CENTER-Taste (Pegel für Mittelkanal)
10. FUNCTION-Taste (Funktion)
11. DELAY TIME-Taste (Verzögerungszeit)
12. Klappe

FÜR DEUTSCHE LESER

1. VIDEO INPUT/OUTPUT-Buchsen (Video-Eingang/Ausgang)
2. CENTER-Lautsprecherklemmen (für Mittellautsprecher)
3. AC-Kabel mit Stecker
4. REAR-Lautsprecherklemmen (für hinteren Lautsprecher)
5. AUDIO INPUT/OUTPUT-Buchsen (Audio-Eingang/Ausgang)

POUR LES LECTEURS FRANCAIS

1. Touche POWER (alimentation)
2. Touche de sélection SURROUND (ambiance)
3. Touche PANEL (panneau)
4. REMOTE CONTROL SENSOR (Détecteur de télécommande)
5. MFD (affichage multi-fonction)
6. Commande MASTER VOLUME (volume de la gamme entière)
7. Commande OUTPUT BALANCE (équilibre de sortie)
8. Touche REAR (niveau de canal arrière)
9. Touche CENTER (niveau de canal central)
10. Touche FUNCTION (fonction)
11. Touche DELAY TIME (temps de retard)
12. Trappe

POUR LES LECTEURS FRANCAIS

1. Prises VIDEO INPUT/OUTPUT (entrée/sortie vidéo)
2. Bornes d'enceinte CENTER (canal central)
3. Cordon secteur avec fiche
4. Borne d'enceinte REAR (canal arrière)
5. Prises AUDIO INPUT/OUTPUT (entrée/sortie audio)

- **Read this manual carefully to ensure that you take full advantage of all the features of this surround amplifier. Keep the manual in a safe place for future reference.**
- **Be sure to check that the date of purchase and the store's name of purchase have been filled in properly on the warranty issued at your store of purchase.**

– TABLE OF CONTENTS –

Check that the following parts are included in the package aside from the main unit:

① Operating Instructions 1
② Remote Controller (RC-178) 1
③ R6P/AA Batteries 2

3 BEFORE USING

Read the following cautions carefully before using the amplifier:

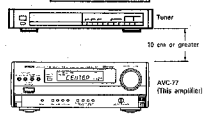
- Moving the set
  Be sure to unplug the power cord and disconnect other cords connecting the amplifier to other audio units before moving the amplifier to prevent damaging or short-circuiting the cords.
- Before turning on the power switch
  Check again to make sure that all connections are correct and that there are no problems with the connection cords. Be sure to turn the power STANDBY before disconnecting or connecting cords.
- Retain the operating instructions
  After reading this manual, store it in a safe place.
- The illustrations used in this manual may differ somewhat from the actual amplifier.

4 INSTALLATION PRECAUTIONS

Using this amplifier or other electronic equipment containing microprocessors simultaneously with a tuner or TV may result in noise in the sound or picture.
If this should happen, take the following steps:

- Install the amplifier as far as possible from the tuner or TV set.
- Keep the antenna lines of the tuner or TV as far as possible from the amplifier's power cord and connection cables.
- This problem is especially frequent when using indoor antennas or 300 Ω/ohm feeder lines. We recommend using outdoor antennas and 75 Ω/ohm coaxial cables.

A note on stacking



For cooling purposes, do not place another AV component directly on top of the amplifier. Be sure to leave a space of at least 10 cm.

5 HANDLING PRECAUTIONS

- **Switching the input function when the input jacks are unconnected**
  Switching the input function when a component is not connected to the input jacks may result in the generation of click noise. If this should happen, turn down the MASTER VOLUME or connect a component to the input jacks.
- **Playback with Dolby Pro Logic**
  The Dolby Pro Logic position provides optimum effectiveness for sources recorded with Dolby Surround. A different surround mode should be selected when playing back sources other than this type. Note in particular that when playing back monaural recording sources, the bypass mode or the simulated mode should be used. Other modes will not provide a suitable effect.
- **Muting of the LINE OUT jacks**
  An electronic muting circuit has been connected to the LINE OUT jacks. This circuit greatly attenuates the output signal for approximately 8 seconds after the power has been switched on. Raising the volume during this operation will result in an extremely large output once the muting has ended, so volume adjustments should be made only after the completion of muting.
- **Rear output level while in the surround mode**
  The rear level will seem small for sources other than Dolby Surround sources. The reason for this is that a rear playback signal is not contained in the software. When playing back such software with a surround function, the mode should be set to something other than Dolby Pro Logic surround. The rear output level may seem small for software having a small rear signal, even Dolby Surround sources.
- **Opening and closing the door**
  This amplifier is equipped with a door on the front panel. Press the "PUSH OPEN" portion printed at the upper right edge of the door to release and open the door. Likewise, to close the door, press in the same manner until a click sound is heard.

NOTE:
The door will open naturally once it has been released, but it may stop before fully opening. This is not a fault; just lightly push the door open.

6 CONNECTIONS

Connecting video decks (VCR)

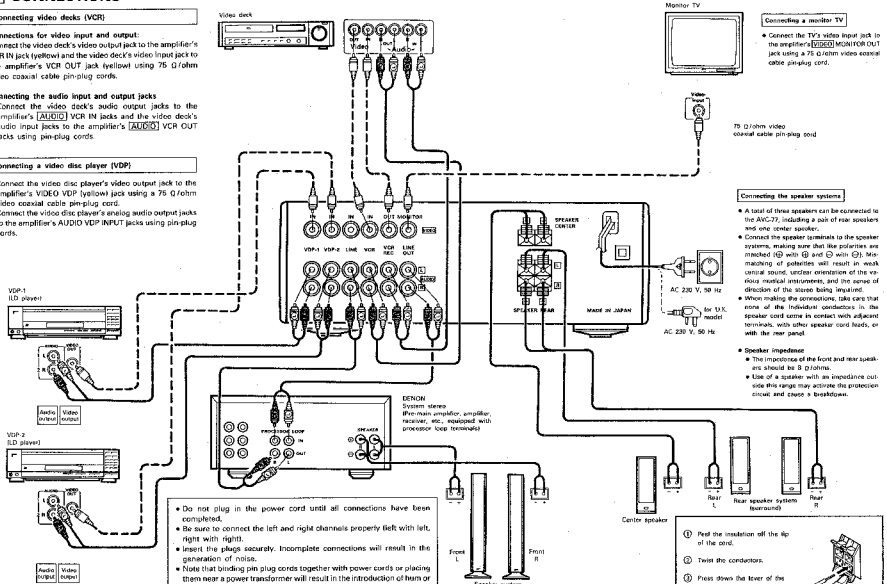
Connections for video input and output:
Connect the video deck's video output jack to the amplifier's VCR IN jack (yellow) and the video deck's video input jack to the amplifier's VCR OUT jack (yellow) using 75 Ω/ohm video coaxial cable pin-plug cords.

Connecting the audio input and output jacks

- Connect the video deck's audio output jacks to the amplifier's AUDIO VCR IN jacks and the video deck's audio input jacks to the amplifier's AUDIO VCR OUT jacks using pin-plug cords.

Connecting a video disc player (VDP)

- Connect the video disc player's video output jack to the amplifier's VIDEO VDP (yellow) jack using a 75 Ω/ohm video coaxial cable pin-plug cord.
- Connect the video disc player's analog audio output jacks to the amplifier's AUDIO VDP INPUT jacks using pin-plug cords.



Connecting a monitor TV

- Connect the TV's video input jack to the amplifier's VIDEO MONITOR OUT jack using a 75 Ω/ohm video coaxial cable pin-plug cord.

75 Ω/ohm video coaxial cable pin-plug cord

Connecting the speaker systems

- A total of three speakers can be connected to the AVC-77, including a pair of rear speakers and one center speaker.
- Connect the speaker terminals to the speaker systems, making sure that like polarities are matched (⊕ with ⊕ and ⊖ with ⊖). Mismatching of polarities will result in weak central sound, unclear orientation of the various musical instruments, and the sense of direction of the stereo being impaired.
- When making the connections, take care that none of the individual conductors in the speaker cord come in contact with adjacent terminals, with other speaker cord leads, or with the rear panel.

- **Speaker impedance**
  - The impedance of the front and rear speakers should be 8 Ω/ohms.
  - Use of a speaker with an impedance outside this range may activate the protection circuit and cause a breakdown.

- Do not plug in the power cord until all connections have been completed.
- Be sure to connect the left and right channels properly (left with left, right with right).
- Insert the plugs securely. Incomplete connections will result in the generation of noise.
- Note that binding pin plug cords together with power cords or placing them near a power transformer will result in the introduction of hum or other noise.
- **Precautions when connecting speakers**
  If a speaker is placed near a TV or video monitor, the colors on the screen may be disturbed by the speaker's magnetism. If this should happen, move the speaker away to a position where it does not have this effect.

Connecting the speaker systems

The speaker system for the left channel (when seen from the front) should be connected to the L terminals and the speaker system for the right channel should be connected to the R terminals.

1. Peel the insulation off the tip of the cord.
2. Twist the conductors.
3. Press down the lever of the speaker terminal with your finger.
4. Insert the core of the cord, then release your finger.

Press lever
Insert cord and release.

7 DOLBY PRO LOGIC SURROUND

• Setting delay time

The optimum delay time depends on the listening position. Look at the diagram on the right and set the optimum delay time for the size of your room and your sitting position.

For example, if your listening position is 6 m away from the front speakers, and 4 m away from the rear speakers, the optimum delay time will be 20 msec.

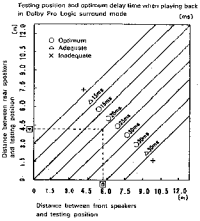
The variation range of the delay time differs from one mode to another.

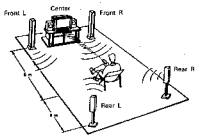
For more information on the delay time variation range, see page 7.

• Adjusting the input balance

This amplifier is equipped with an auto input balance circuit, so there is no input balance adjustment knob.

Testing position and optimum delay time when playing back in Dolby Pro Logic surround mode

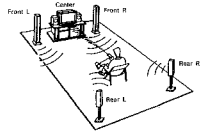




The ON/OFF and delay time setting for the speaker output (FRONT, REAR, CENTER), and the volume adjustment for the rear and center speakers can be set individually for each surround mode.

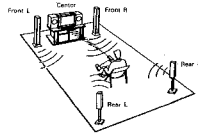
• Speaker placements in Dolby Pro Logic surround mode

When playing back music in Dolby Pro Logic surround, use of a center speaker will provide the best effect.



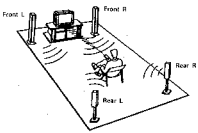
Normal mode

Normal mode: This is the best mode to use if the center channel is smaller than the speakers on the left and right. Signals of 100 Hz or below, which has almost no effect on orientation, are divided between the left and right channels, and the center channel outputs signals of 100 Hz or more, so the bass on the left and right channels is deeper.



Wide mode

Wide mode: This is the best mode to use when the center channel speaker is of the same grade as the speakers on the right and left. The entire frequency band, from low regions to high, is output to the center channel playback speaker, giving an exciting sound field for your enjoyment.



Phantom mode

Phantom mode: Phantom mode: This is the mode to use when the center channel playback speaker is not in use. The orientation emphasis circuit electronically positions the signal in the center during playback, so that you can enjoy an exciting sound field even without using the center speaker.

• Test tone

The test tone produces a test signal for adjusting the level in each channel in the Dolby Pro Logic surround mode. Before using Dolby Pro Logic surround, position the speakers as described above, find the ideal balance for the volume of each speaker using the test tone, and set the volume etc. so that they sound as if they are at the same level.

In normal and wide mode, the test tone switches in the following order:

Front left → Center → Front right → Rear

Adjust the volume balance using this signal until the optimum balance is reached.

In phantom mode the switching is as follows:

Front left → Front right
Rear

Note that on this amplifier, the test tone is produced every 4 seconds after the first 2 seconds.

Use the remote control unit (RC-178) to make adjustments using the test tone.

8 PART NAMES AND FUNCTIONS

Front panel

❶ POWER switch

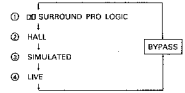
• **ON**
When this switch is pressed once, the power turns on and "MUTING" flashes on the LCD ❸. (The muting circuit is activated while "MUTING" is flashing to prevent noise when the POWER switch is operated.) After several seconds the muting circuit turns off, the "MUTING" indicator turns off and the set is in the normal operating mode.

• **STANDBY**
Press the switch once again to set the standby mode. "OFF" is displayed on the LCD.

❷ SURROUND buttons
Use these buttons to select the surround mode.

• **BYPASS button**
When this button is pressed, the surround mode is bypassed and the normal stereo sound is produced.
No signals are output to the rear channel.

• **MODE selector button**
Press this button to select one of the surround modes shown below.
Order of priority



① [Dolby] SURROUND PRO LOGIC
Use this mode for video software, etc., recorded in Dolby Surround.
Select the center mode according to the speaker system being used.
Set the delay time to between 15 msec and 30 msec, according to the size of the room and the position of the speakers.

② HALL surround
Use this to create the atmosphere of a hall.
The delay time can be set to between 5 msec and 30 msec.
No signals are output to the center channel.

③ SIMULATED
Use this to create a surround effect with monaural sources.
No signals are output to the center channel.
The delay time can be set to between 5 msec and 30 msec.

④ LIVE
Use this to create the atmosphere of a live program in a studio.
The delay time is set at 0 msec.

❸ PANEL button
When this button is pressed, the current settings are displayed on the LCD.
Use this button to switch the LCD display.
For details, refer to pages 7 to 8.

❹ REMOTE SENSOR
The remote control unit is pointed toward this sensor and operated.

❺ LCD (liquid crystal display)
The surround mode and input and output information is displayed here when the power is turned on.
Normally one of the surround mode indicators is lit.
If another button is pressed, a display pertaining to that button is shown for approximately 5 seconds, after which the surround mode is once again displayed.
Refer to page 8 for details on the LCD indicators.

❻ Master VOLUME control
Turn the control clockwise (↷) to increase the volume, counterclockwise (↶) to decrease it.

❼ OUTPUT BALANCE control
Use this to adjust the balance between the left and right outputs to create an effective surround sound.

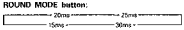
❽ REAR speaker volume control buttons
Use these to adjust the volume of the rear (surround) speakers.
• **UP:** Press this to increase the volume.
• **DOWN:** Press this to decrease the volume.
The volume changes while one of the buttons is pressed, and stops changing when the button is released. The volume change is displayed on the LCD.
These buttons do not function when in the bypass mode.

❾ CENTER speaker volume control buttons
• **UP:** Press this to increase the volume.
• **DOWN:** Press this to decrease the volume.
The volume changes while one of the buttons is pressed, and stops changing when the button is released. The volume change is displayed on the LCD.
These buttons do not function when in the hall, live, simulated or Dolby Pro Logic phantom modes.

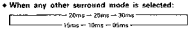
❿ Input selector buttons
Use these buttons to select the input audio and video signals.
• **VDP-1:** Press this to use the VDP connected to the VDP-1 jacks.
• **VDP-2:** Press this to use the VDP connected to the VDP-2 jacks.
• **VCR:** Press this to use the video deck connected to the VCR jacks.
• **LINE:** Press this when a amplifier or receiver equipped with processor loop terminals is connected to select that component.

⓫ DELAY selector button
Press this button to switch the delay time, as shown below.

• **When Dolby Pro Logic is selected with the SURROUND MODE button:**

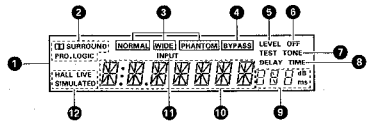


• **When any other surround mode is selected:**



⓬ TRAP DOOR
Press the right edge to open the door.
To close it, press on the right dege. A click is heard to indicate that the door is closed.

Explanation of the LCD



❶ Multi-function display
The settings are displayed in order each time the PANEL button is pressed.
Normally the surround mode setting is displayed.

❷ SURROUND PRO LOGIC indicator
This is displayed when the Dolby Surround Pro Logic mode is selected with the SURROUND MODE button.

❸ NORMAL, PHANTOM and WIDE indicators
These light in the following order:

NORMAL → PHANTOM → WIDE

❹ BYPASS indicator
This lights when the surround circuit is bypassed by pressing the SURROUND BYPASS button.

❺ LEVEL indicator
This lights along with section ❼ when the REAR and CENTER UP and DOWN buttons are pressed. Adjust the level with the UP and DOWN buttons while watching the display in section ❼.
The level is displayed in steps of 2dB from –48dB (minimum) to 0dB (maximum).

❻ OFF indicator
This lights when the standby mode is set by turning off the POWER switch.

❼ TEST TONE indicator
This lights when the TEST TONE button is pressed. (RC-178)
Refer to page 10 for details.

❽ DELAY TIME indicator
This lights along with section ❼ when in the surround mode. Use the DELAY button to set the delay time.

DOLBY PRO LOGIC	Displayed in 5msec steps from 15ms to 30ms.
HALL and SIMULATED	Displayed in 5msec steps from 05ms to 30ms.
LIVE	Fixed at 00ms.

❾ Multi display 1
This indicates the delay time, center or rear speaker volume level, on or off setting for the surround mode, etc.

❿ Multi display 2
This indicates the various modes set with different buttons.

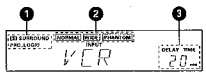
⓫ INPUT indicator
This indicates that the function shown on multi display 2 is being input.

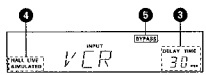
⓬ HALL, SIMULATED and LIVE indicators
These light in the following order when the SURROUND MODE button is pressed:

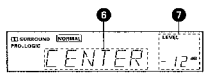
SURROUND PRO LOGIC → HALL → SIMULATED → LIVE → BYPASS

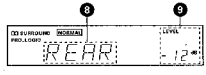
Examples of Multi Function Display Patterns

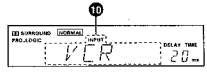
The displayed modes indicate the operations performed when the buttons on the front panel of the AVC-77 or on the remote control unit (RC-176) are operated.











1. Surround mode displays

(1) Dolby Pro Logic modes
❶DESURROUND PRO LOGIC indicator
↓
Press the ⊡ CENTER MODE button:
❷NORMAL, PHANTOM, or WIDE
❸DELAY TIME
DOLBY PRO LOGIC — Displayed in 5ms steps from 15ms to 30ms.

(2) Other surround modes
• The surround mode is displayed as follows:
❶HALL or SIMULATED — Displayed in 5ms steps from 05ms to 30ms.
LIVE — Fixed at 0ms.

(3) BYPASS indicator
❷Displayed in the bypass mode.

2. Center level display
❶Displayed when CENTER UP or DOWN button is pressed.
❷Displayed in steps of 2dB from –48dB (minimum) to 0dB (maximum).

3. Rear level display
❶Displayed when REAR UP or DOWN button is pressed.
❷Displayed in steps of 2dB from –48dB (minimum) to 0dB (maximum).

4. INPUT indicator
❷The function selected with the input selector buttons is displayed.

5. MUTING display
This appears when the POWER switch is turned on. "MUTING" flashes until the muting circuit turns off.

6. OFF indicator
This appears when the POWER switch is turned off.

9 OPERATION

PREPARATIONS FOR PLAYBACK

1. **Checking connections**
   - Check the connection diagrams (pages 5 to 10), and make sure that all connections are correct.
   - Check that the left and right speaker systems, and (the polarities (⊕), (⊖), are matched correctly.
   - Check that the pin plug cords are connected properly, left with left and right with right.
   - Check that all cables are securely plugged in.
   - Check that the cables used are of the correct type.

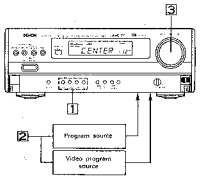
2. **Checking all knob positions**
   (For numbers, see pages 7 to 8.)
   - Put the MASTER VOLUME control knob in the 0 position by turning it as far to the left as it will go.
   - Set the OUTPUT BALANCE control knob in the center positions.

After making these checks, turn on the power by pressing the POWER switch.
The "MUTING" indicator flashes on the LCD, then turns off after several seconds, at which point the set is in the normal operating mode.

Note on operations carried out during playback
If the FUNCTION buttons or other buttons are operated during playback, the sound will be interrupted. This is due to the activation of the muting circuit which prevents the generation of noise during switching. It is not a malfunction.

Protection circuit ("PROTECTION" display lights)
This amplifier has a built-in high-speed protector circuit.
The purpose of this circuit is to prevent the internal circuits being damaged by the large currents which flow through the inner circuitry of the set when output is sent to a partly disconnected or short-circuited speaker terminal.
When the protector circuit is activated, the speaker output is automatically cut off, and the message "PROTECTION" is displayed.
If this should happen, be sure to unplug the amplifier power cord and re-check the speaker connectors before plugging the power cord back in and switching the power back on. If the PROTECTION message is still displayed after you have re-checked, contact your dealer or your local Sales Office or Branch Office.

1. **Program source playback**



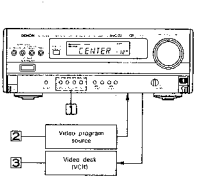
1 Press the desired FUNCTION button. The function for the button which was pressed is indicated on the LCD.

Program source	FUNCTION Button
To watch and listen to the pictures and sound of the video disc player connected to the VDP-1 jacks	VDP-1
To watch and listen to the pictures and sound of the video disc player connected to the VDP-2 jacks	VDP-2
To watch and listen to the pictures and sound of the video cassette recorder connected to the VCR jacks	VCR
To watch and listen to the pictures and sound from the amplifier or receiver equipped with processor loop terminals when the amplifier or receiver equipped with processor loop terminals is connected to the LINE jacks	LINE

2 Start playback of the program source.
For operating instructions, consult the operating instructions for the relevant components.

3 Adjust volume.

2. **Recording a video program source or making a video copy**
(To record or copy the video source currently monitored)



1 Press the desired FUNCTION button. The function for the button which was pressed is indicated on the LCD.

Video program source	FUNCTION Button
To record from a video disc player connected to the VDP-1 jack	VDP-1
To record from a video disc player connected to the VDP-2 jack	VDP-2
To record the pictures from the amplifier or receiver equipped with processor loop terminals connected to the LINE jacks	LINE

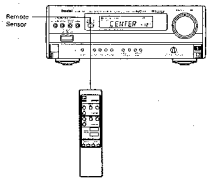
2 Start playback of the desired video program source.

3 Start recording on the video deck.
For instructions, consult the operating instructions of the components concerned.

10 REMOTE CONTROL UNIT

Following the procedure outlined below, insert the batteries before using the remote control unit.

■ Range of operation of the remote control unit



Point the remote control unit at the remote control sensor as shown on the diagram at the left.

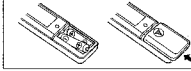
NOTES:

- The remote control unit can be used from a straight distance of approximately 7 meters, but this distance will shorten or operation will become difficult if there are obstacles between the remote control unit and the remote control sensor, if the remote control sensor is exposed to direct sunlight or other strong light, or if operated from an angle.
- Neon signs or other devices emitting pulse-type noise nearby may result in malfunction, so keep the set as far away from such devices as possible.

■ Inserting the batteries

1. Open the bottom cover of the remote control unit and remove the battery cover.

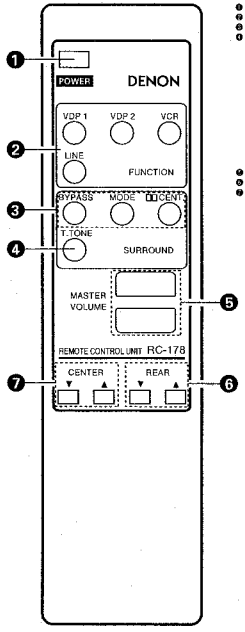
2. Insert the two R6P/AA batteries, matching the ⊕ and ⊖ marks on the batteries with those in the case.
   Close the bottom cover until it clicks shut.



NOTES

- Use only AA, R6P, UM-3 batteries for replacement.
- Be sure the polarities are correct. (See the illustration inside the battery compartment.)
- Remove the batteries if the remote control transmitter will not be used for an extended period of time.
- If batteries leak, dispose of them immediately. Avoid touching the leaked material or letting it come in contact with clothing, etc. Clean the battery compartment thoroughly before installing new batteries.

Button layout



1. POWER button
2. FUNCTION button
3. SURROUND MODE button
4. TEST TONE button
   This button is used to emit test signals for adjusting the level of the different channels in the Dolby Pro Logic Surround mode.
   Before playing software recorded in Dolby Pro Logic Surround, position the speakers, then use the test tones to adjust the balance between the volume of the different speakers so that they sound the same.
   In the normal and wide modes, the test tones are emitted in the following order:
   Front left → Center → Front right → Rear
   The test tones are cancelled when this button is pressed again.
5. MASTER VOLUME button
6. REAR channel level button
7. CENTER channel level button

11 SPECIFICATIONS

- **Audio section**

Rated maximum output	CENTER (Center 1ch driven)
(All properties shown are only for the power amplifier stage.)	30 W (8 Ω/ohms, 1 kHz with 1.0% THD)
	REAR (rear 2ch driven)
	15 W + 15 W (8 Ω/ohms, 1 kHz with 1.0% THD)
Frequency response	40 Hz to 20 kHz ±3 dB
Rated input/input impedance	150 mV/47 kΩ/ohms
S/N ratio	90 dB
Speaker impedance	Center: 8 Ω/ohms
	Rear: 8 Ω/ohms
LINE input sensitivity/impedance	150 mV/47 kΩ/ohms

- **Video section**

Input and output level/impedance	1 Vp-p/75 Ω/ohms
Frequency response	2 Hz to 8 MHz +0, −3 dB

- **General**

Power source	AC 230 V, 50 Hz
Power consumption	135 W
Maximum external dimensions	270 (W) × 96 (H) × 313 (D) mm (10-5/8" × 3-25/32" × 12-21/64")
Weight	4.7 kg (10 lbs 6 oz)

- **Remote control unit (RC-178)**

Remote control system	Infrared pulse
Number of buttons	15
Power supply	Two DC 1.5V R6P/AA batteries
Maximum external dimensions	48 (W) × 175 (H) × 18 (D) mm (1-57/64" × 6-57/64" × 45/64")
Weight	120g (including batteries) (Approx. 4 oz)

* Maximum dimensions include controls, jacks, and covers.
(W) = width, (H) = height, (D) = depth

* Specifications are subject to change without notice.

12 TROUBLESHOOTING

Check these points before you conclude that the amplifier has developed a fault.

1. **Are the connections correct?**
2. **Are you operating the equipment correctly, as described in the operating instructions?**
3. **Are the speakers, turntable, CD players or other components connected properly?**

If the unit does not work properly, make the checks described in the table below.
If the fault is not covered in this table, the amplifier has probably developed a fault, and you should switch off the power immediately and contact your dealer or your nearest DENON Service Center or dealership.

	Problem	Cause	Measures	Page
When the problem occurs during CD and during FM broadcasts	Although the power has been switched on, the LCD does not light up and no sound is produced.	• Power cord plug is not securely plugged in.	• Check that power cord plug is properly plugged in.	5
	LCD is lit up but no sound is produced.	• Speaker cord is not securely connected.	• Connect speaker cord securely.	5
		• Input switching button is in wrong position.	• Put switching button in correct position.	7
		• Volume adjustment knob is turned all the way down.	• Turn volume knob up to a suitable level.	7
	LCD keeps flashing.	• Speaker jack has short-circuited.	• Turn off power switch, connect speakers securely, then turn power switch back on.	5
	Sound only comes out on one side.	• Speaker cords is not securely connected.	• Connect speaker cords securely.	5
		• Input and output cords are not securely connected.	• Connect input and output cords securely.	5
		• Left and right sides are not properly balanced.	• Adjust balance to suitable level using balance control knob.	7—9
	During stereo playback, the positions of the musical instruments is reversed.	• Left and right speaker cords or left and right input and output cords of components are connected the wrong way round.	• Reverse connections.	5
Remote control unit	Remote control unit does not function properly when operated.	• Batteries have run down.	• Take out the batteries and replace them with new ones.	—
		• Remote control unit is too far away from main unit.	• Bring the remote control unit nearer to the main unit.	—
		• Something is blocking the way between the remote controller and the main unit.	• Remove whatever is in the way.	—
		• You are pressing the wrong button.	• Press the correct button.	—
		• The batteries have been inserted with ⊕ and ⊖ the wrong way round.	• Take the batteries out and re-insert them the right way round.	—
	"PROTECTION" message is displayed on LCD display.	• Speaker cords are not securely connected.	• Turn off power, connect speaker cords securely, and turn power back on.	8

13 LAST FUNCTION MEMORY

- This amplifier has a Last Function Memory which stores the input and output state immediately before the power is switched off.

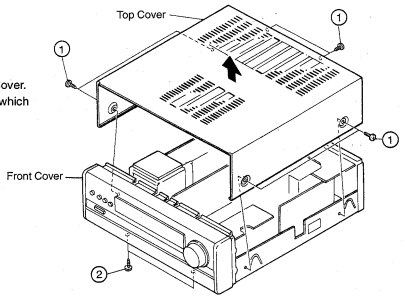
Because of this function, even when the power has been switched off, the memory is stored for about 3 days, so when the power is switched on again, there is no need to carry out complicated settings again.

DISASSEMBLY

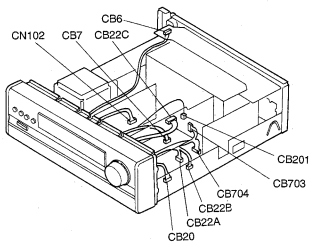
(To reassemble reverse disassembly)

1. Removing the top cover and front panel

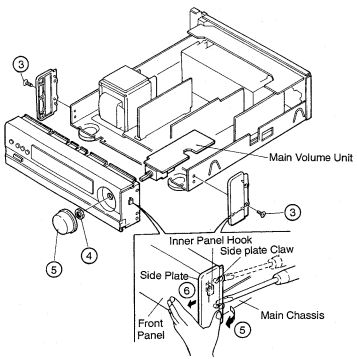
(1) Remove the 6 screws (1) which fasten the Top Cover.
(2) Remove the 2 screws (2) of the bottom side which fasten the Front Panel.



(3) Disconnect connectors CB6 which is attached to the Video I/O unit, CB22C and CB703 which are attached to the Surround Unit, CN102, CB201, CB7, CB704, CB22B, CB22A and CB20 which are attached to the Main Unit.



(4) Remove 2 screws (3) which fasten the Side Plate.
(5) While detaching in the direction of the arrow the tabs of the side plate and the holes of the Main Chassis (with a flat-bladed screwdriver).
(6) Use your fingers to push out the hook of the inner panel from the Side Plate in direction of the arrow.
Using the same method for the left side, remove the Side Plate, and remove the Front Panel.

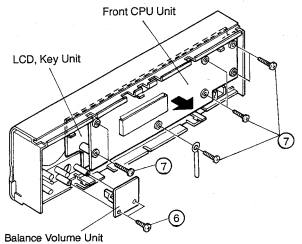


2. Removing the Printed Wiring Boards

MAIN VOLUME UNIT
(1) Pull out Master Volume Knob (4).
(2) Remove nut (5), and detach the Main Volume Unit.

BALANCE VOLUME UNIT
(3) Remove the 2 screws (6), and detach the Balance Volume Unit.

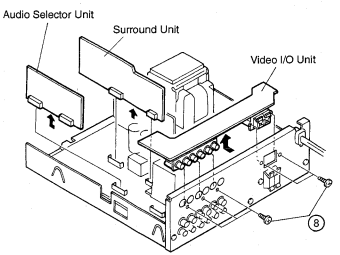
FRONT CPU UNIT / LCD, KEY UNIT
(4) Remove the 7 screws (7) which fasten the Front CPU Unit and LCD, Key Unit, and detach the board in the direction of the arrow.



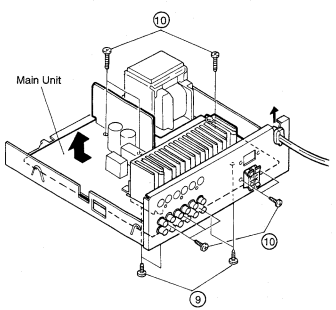
AUDIO SELECTOR UNIT
(5) Detach the Audio Selector Unit in the direction of the arrow.

SURROUND UNIT
(6) Detach the Surround Unit in the direction of the arrow.

VIDEO I/O UNIT
(7) Remove the 5 screws (8) and Detach the Video I/O Unit in the direction of the arrow.



MAIN UNIT
(8) Remove the 4 screws (9) (Radiator fixed screw) from bottom side.
(9) Remove the 8 screws (10) which are attached to the Main Unit.
(10) Detach the Cord Band and AC Cord in the direction of the arrow.
(11) Detach the Main Unit in the direction of the arrow.



CIRCUIT DESCRIPTIONS

SURROUND CIRCUIT

(1) Table below shows output in each surround mode.

MODE		Output signal: FRONT Lch	FRONT Rch	FRONT Center	REAR Lch	REAR Rch	Delay Time	Output control: SP-A	SP-B	Center	Rear
BYPASS		Lin	Rin		—	—	—				×
DOLBY PRO LOGIC	NORMAL	PRO.FL	PRO.FR	PRO.C	PRO.S		15~30				
	PHANTOM	↓	↓	—	↓		↓			×	
	WIDE	↓	↓	PRO.C	↓		↓				
HALL		Lin	Rin	—	(Lin + Rin) delay		5~30			×	
SIMULATED		↓	↓	—	(Lin+Rin)d	–(Lin+Rin) d	↓			×	
LIVE		↓	↓	Lin + Rin	(Lin–Rin)	(Lin–Rin)	0				

In output control: ( )d means delay signal. × means OFF output.

Table 1

(2) Surround mode switching motion

MODE \ SW. NO		Surround mode change over switching position, IC405 LC7822 "H" SW NO. 1	2	3	4	5	6	7	8	Output Control (Speaker and pin) Front	Center	Rear	Delay Time (msec)
BYPASS		○									×	×	—
DOLBY PRO LOGIC	NORMAL		○			○		○					15~30
	PHANTOM		○			○		○			×		15~30
	WIDE		○			○		○					15~30
HALL		○			○			○			×		5~30
SIMULATED		○			○				○		×		5~30
LIVE		○		○			○	○			×		0 fixed
		R	PRO.R	—	—	PRO.C	L+R	R	–R	×: Output and Control Inhibit.			
		L	PRO.L	—	L+R	PRO.S	L–R	L	L				
		FRONT SIGNAL			CENTER, REAR SIGNAL			REAR SIGNAL					
		Mark ○ is ON position. Mark Nil is OFF position.											

Table 2

(3) Dolby Pro-logic surround circuit

AVC-210 provides **Dolby pro-logic surround circuit** surround decoder which functions same as Dolby surround decoder for professional use. The circuit is also called **active decoder**, and it comprises a different circuit from **passive decoder**, conventionally employed for home use labelled as "Dolby surround." (Figure 1)

Directional enhancer to produce crisp sound image travel.

Main feature is **Directional enhancement circuit**. The conventional Dolby surround circuit is designed to control 3 channels (L.R.S), but this circuit provides a new center channel and 4 channels (L.R.C.S.) control, and employs speaker system same as that of a theater to produce the sound effect.

A merit of directional enhancement circuit is greatly improves the front and rear sound separation to provide a sharp and dynamic front and rear sound image traveling. Conventionally the front and rear separation is around 3 dB, but the pro-logic provides approximately 26 ~ 40 db. (Figure 2, 3). The directional enhancement circuit controls left, right, center and surround signals independently, and the sound image is very crisp and clear. With the conventional Dolby surround, the center sound image is nothing but compound of L and R channels, but the pro-logic has an independent center channel to produce the sound image, and achieved approximately 26 ~ 40 dB L and R channels separation. When the sound image is at center, both L and R channel output are cut down and as the sound image travels to L channel, center and R channel output are cut to enhance the travel of the sound.

Feature of Pro-Logic mode

- NORMAL: Signals which below 100Hz is cut are applied to center channel, and the signals below 100Hz are applied to L and R front speakers. Employ L and R speakers of a certain grade (as a pointer, use ones better than book-shelf), and use a smaller speaker for the center channel.
- WIDE: Normal signal is applied to center channel as it is. Employ speakers of the same grade (better than book-shelf) for center channel as well as L and R speakers.
- PHANTOM: Center channel signals are evenly applied to L and R channels. When a center speaker is not available, this mode is employed. Even without the center channel, the directional enhancement circuit functions as it is.
- TEST TONE : Used to adjust output level of each channel.

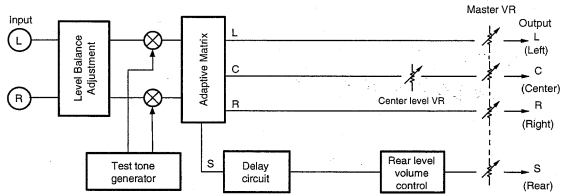


Figure 1

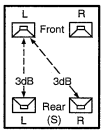


Figure 2

Dolby pro-logic surround decoder
(Active decoder)

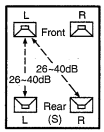


Figure 3

Dolby surround decoder
(Passive decoder)

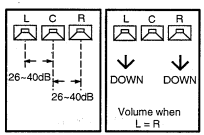


Figure 4

Dolby pro-logic surround decoder
(Active decoder)

Confirm Pro-logic circuit function

Confirm correct pro-logic circuit function with input signal shown table below.

- Measurement : Apply the correct input signal, and adjust level VR of master, center and rear, so that the level falls approximately within * level, respectively.

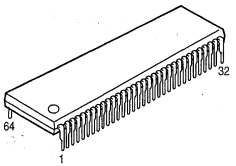
	Input	Output	Mode		
			Normal	Phantom	Wide
Pro-logic	L ch only	L	* 0dB (1 kHz)	→	→
		C	(a) below –20dB (Normally approximatery –26 ~ –42 dB)		
		R			
		S			
	R ch only	L	Same as (a)		
		C			
		R	* 0dB (1 kHz)	→	→
		S	Same as (a)		
	L=R Same phase signal	L	Below –20 dB/approx. –6dB	0 dB	Same as (a)
		C	* 0 dB/approx. –3dB	Same as (a)	0 dB/0 dB
		R	Below –20dB/approx. –6dB	0 dB	Same as (a)
		S	Same as (a)		
	L=–R Both CHs Reversed phase signal	L	Same as (a)		
		C			
		R			
		S	* +3dB	→	→

Table 3

SEMICONDUCTORS

●IC's

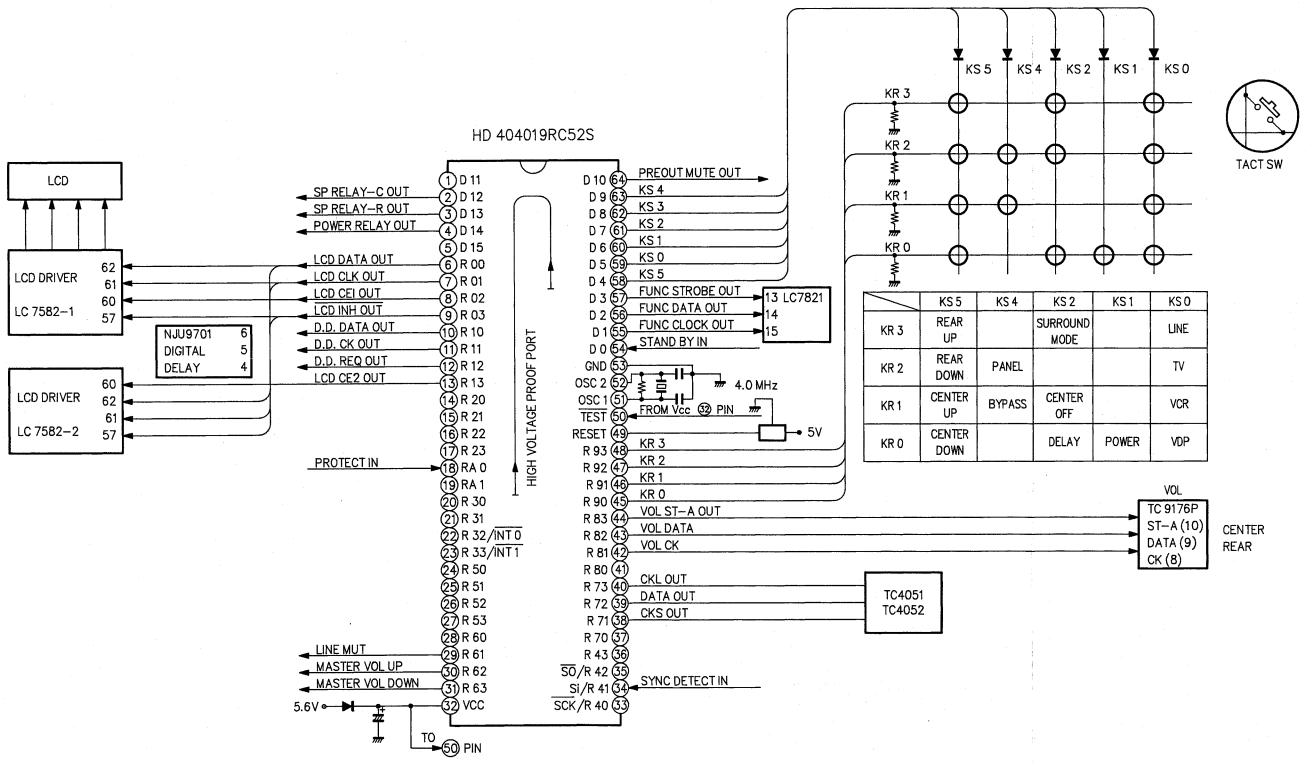
HD404019RC52S
(IC601)



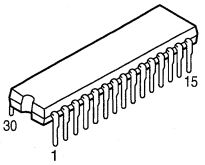
Control Microprocessor HD404019RC52S Terminal Function

Pin	Port Name	Function Name	Function
1	D11	SP RELAY-F OUT	Performs toggle movement synchronizing with SP-A.
2	D12	SP RELAY-C OUT	Performs toggle movement synchronizing with SP-CENTER.
3	D13	SP RELAY-R OUT	Performs toggle movement synchronizing with SP-REAR.
4	D14	POWER RELAY OUT	Performs toggle movement synchronizing with Power Key. Power ON → HIGH, POWER OFF → LOW
5	D15	CENTER OFF OUT	Turn OFF DOLBY CENTER MODE. HIGH → CENTER OFF, LOW → CENTER ON, Default → LOW.
6	R00	LCD DATA OUT	Transfers serial data to LCD driver 1/2 (LC 7582).
7	R01	LCD CLK OUT	Transfers serial clock to LCD driver 1/2.
8	R02	LCD CE1 OUT	Transfers chip enable to LCD driver 1.
9	R03	LCD INH OUT	Terminal to forcibly put out light of indication of LCD drive 1/2. LOW → Forcibly light put out. HIGH → Indication ON.
10	R10	D.D.DATA OUT	Transfers serial data to DIGITAL DELAY (M50198).
11	R11	D.D.CK OUT	Transfers serial clock to DIGITAL DELAY (M50198).
12	R12	D.D.REQ OUT	Transfers chip request to DIGITAL DELAY (M50198).
* 13	R13	LCD CE2 OUT	Transfers chip enable to LCD Driver-2.
14	R20	NC	
15	R21	SERIAL SIG OUT	Output terminal for serial communication.
16	R22	VTR-1 REC OUT	Inhibit terminal for VTR-1 VIDEO REC OUT.
17	R23	USA	At "LOW", U.S.A. Model.
18	RA0	PROTECT IN	Speaker protection input terminal.
19	RA1	RE CHECK IN	Receiver connection check terminal. HIGH → Performs serial communication; Does not receive remote control. LOW → Does not perform serial communication; Receives remote control.
20	R30	DM1	Shifting terminal of SSM2126 (Pin 16)
21	R31	DM2	Shifting terminal of SSM2126 (Pin 17)
22	R32/INT0	SERIAL SIG IN	Input terminal for serial communication (ACTIVE → LOW).
23	R33/INT1	REMOCON IN	Remote control decode signal input terminal (ACTIVE → LOW).
24	R50	DM3	Shifting terminal of SSM2126 (Pin 15)
25	R51	DM4	Shifting terminal of SSM2126 (Pin 19)
26	R52	CM1	Shifting terminal of SSM2126 (Pin 20)
27	R53	CM2	Shifting terminal of SSM2126 (Pin 21)
28	R60	VOL ST-B OUT	Strobe output terminal for REAR VOLUME/BALANCE (TC9176P).
29	R61	LINE OUT	Output terminal for LINE OUT MUTING (ACTIVE → LOW).
30	R62	MASTER VOL UP	Output terminal for MASTER VOLUME UP.
31	R63	MASTER VOL DOWN	Output terminal for MASTER VOLUME DOWN.
32	V_{CC}	V_{CC}	Power supply 5V
33	R40/SCK	SLCK OUT	Clock output terminal for O.S.D. (MB88323A)
34	R41/SI	SYNC DETECT OUT	Input terminal to detect presence of VIDEO signal. HIGH → VIDEO signal present (VIDEO MODE 1) LOW → No VIDEO signal (VIDEO MODE 2)
35	R42/SO	SI DATA OUT	Data output termnal for O.S.D. (MB88323A)
36	R43	CS OUT	Chip selector output terminal for O.S.D. (MB88323A)
37	R70	OTHER RESET OUT	External reset pulse output terminal (Low active pulse).
38	R71	CKS OUT	Shift clock output terminal of I/O Expander (M6631P)
39	R72	DATA OUT	Serial data output terminal of I/O Expander (M6631P)
40	R73	CKL OUT	Latch clock output terminal of I/O Expander (M6631P)
41	R80	OE OUT	Output enable output terminal of I/O Expander (M6631P)
42	R81	VOL CK OUT	Clock output terminal for volume (TC9176P)
43	R82	VOL DATA OUT	Data output terminal for volume (TC9176P)
44	R83	VOL ST-A OUT	Strobe output terminal for Front Volume / Balance (TC9176P)
45	R90	KR0	Key return input terminal
46	R91	KR1	Key return input terminal
47	R92	KR2	Key return input terminal
48	R93	KR3	Key return input terminal
49	RESET	RESET	Chip reset input terminal
50	TEST	TEST	Pull up on V_{CC}
51	OSC1	OSC1	X'tal 4MHz
52	OST2	OSC2	X'tal 4MHz
53	GND	GND	GND
54	D0	STANDBY IN	Power breakdown detect terminal (Detects Low width)
55	D1	FUNC CLOCK OUT	Clock output terminal for Function shifting (LC7821/22)
56	D2	FUNC DATA OUT	Data output terminal for Function shifting (LC7821/22)
57	D3	FUNC STROBE OUT	Strobe output terminal for Function shifting (LC7821/22)
58	D4	KS5	Key strobe output terminal
59	D5	KS0	Key strobe output terminal
60	D6	KS1	Key strobe output terminal
61	D7	KS2	Key strobe output terminal
62	D8	KS3	Key strobe output terminal
63	D9	KS4	Key strobe output terminal
64	D10	PREOUT MUTE OUT	Output terminal for PREOUT MUTING (ACTIVE=Low)

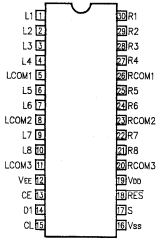
CONTROL MICROPROCESSOR DIAGRAM



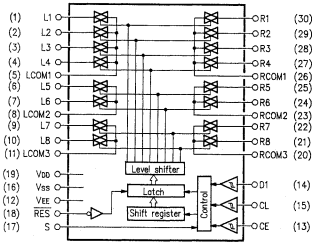
LC7821 (IC501)
LC7822 (IC405)



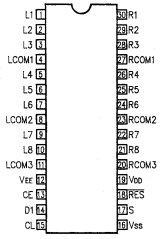
LC7821



LC7821



LC7822



LC7822

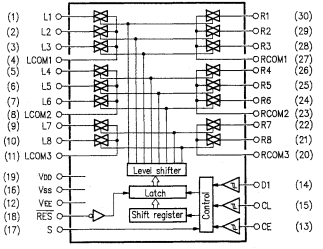
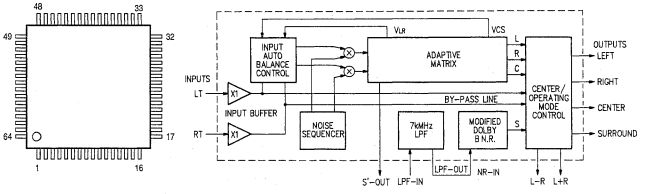


TABLE OF TERMINAL FUNCTION for LC7821, LC7822

Name of Terminal	I/O	Equivalent Internal Circuit	Function of Terminal
VDD, VSS, VEE			Power terminal.
L1 ~ L8, R1 ~ R8 LCOM1 ~ LCOM4, BCOM1 ~ BCOM4		Refer to block diagram	In/Out terminal of analog switch.
CL, DI, CE	I		Serial data input terminal (Schmidt buffer). CL = Clock input terminal. DI = Data input terminal. CE = Chip enable terminal.
S	I		Selection terminal for using of two. Address will be shifted as per below table when switching S terminal to L or H.
$\overline{RES}$	I		Reset terminal. Condition of analog switch is not fixed at the time of turning on the power. When shift this termnal to L, all analog switches become OFF.

Name of Item	S Terminal	Address			
		A0	A1	A2	A3
LC7821	L	0	1	0	1
	H	1	1	0	1
LC7822	L	0	1	1	1
	H	1	1	1	1

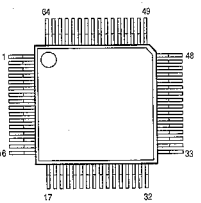
NJM2177AF (IC402)

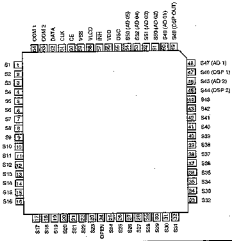


NJM2177AF Terminal Function

No.	Pin Name	No.	Pin Name	No.	Pin Name	No.	Pin Name	No.	Pin Name
1	NC	14	R-IN	27	MODE-CNT	40	NR-IN	53	VCS-TC1
2	L-RECT-IC	15	R-AB-OUT	28	L-OUT	41	VREF	54	VLR-TC1
3	R-BPF-OUT	16	NC	29	R-OUT	42	VREF	55	VLR-TC2
4	R-BPF-IN	17	NC	30	L+R-OUT	43	NR-WT	56	S-RECT-OUT
5	R-RECT-TC	18	R-AB-IN	31	L-R-OUT	44	LPF-OUT	57	C-RECT-OUT
6	GND	19	NOISE-CNT-E	32	NC	45	LPF-INV-IN	58	R-RECT-OUT
7	AB-GATE	20	NOISE-CNT-A	33	NC	46	LPF-NINV-IN	59	L-RECT-OUT
8	AB-HOLD-TC	21	NOISE-CNT-B	34	CENTER-MODE	47	NR-TC	60	S-RECT-TC
9	L-AB-IN	22	NOISE-REF	35	Vcc	48	NC	61	C-RECT-TC
10	L-AB-OUT	23	NOISE-HPF	36	C-OUT	49	NC	62	L-BPF-OUT
11	L-IN	24	NOISE-LPF	37	S'-OUT	50	VLR-TC3	63	L-BPF-IN
12	L-INBUF-OUT	25	S-OUT	38	IREF	51	VCS-TC3	64	NC
13	R-INBUF-OUT	26	CENTER-CNT	39	NR-VCF	52	VCS-TC2		

LC7582E (IC801, 802)

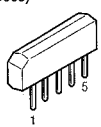


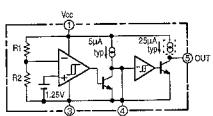


LC7582E Terminal Function

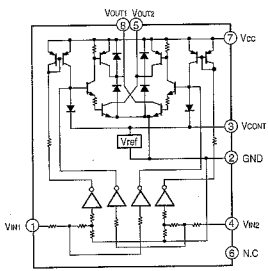
Symbol	Function
S1 – S43	Segment output terminal.
S46 (DSP1), S44 (DSP2)	Segment output terminal or DSP input terminal.
S47 (AD1), S45 (AD2)	Segment output terminal or AD input terminal.
S48 (DSPOUT)	Segment output terminal or DSP output terminal.
S49 – S63 (AD01 – 5)	Segment output terminal or AD output terminal.
COM1,2	Common output terminal.
V_{LCD}	LCD bias voltage setting terminal.
OSC	Oscillator terminal.
CE, CLK, DATA	Input terminal for panel data transfer.
Vss, V_{DD}	Power Supply.
INH	Input terminal for unlighting indication. (Effective only for output driver: transfer of serial data during unit is feasible.
OPEN	No connection.

M51954AL (IC603)

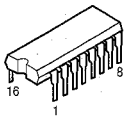


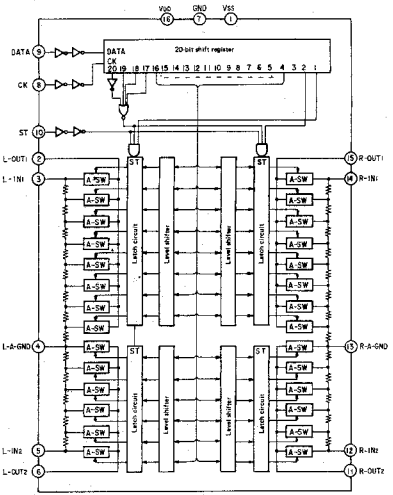


LB1630 (IC703)

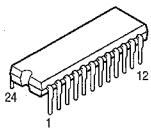


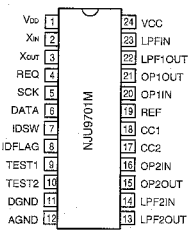
TC9176P
(IC413)

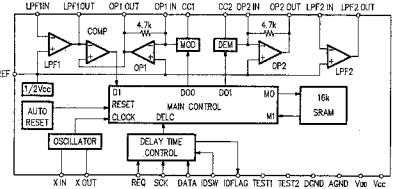




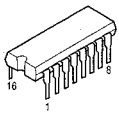
NJU9701M
(IC408)



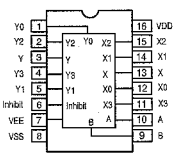


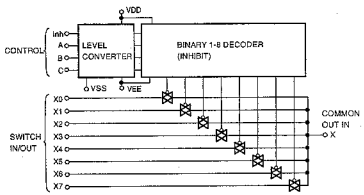


TC4051BP
TC4052BP

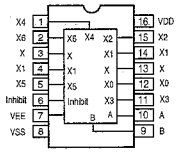


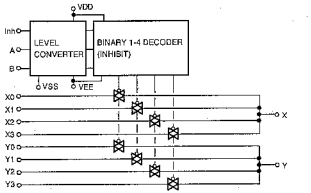
TC4051BP
(IC901, 902)



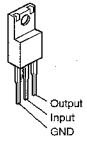


TC4052BP
(IC502)

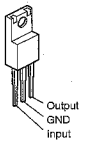




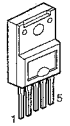
NJM7906FA (IC102, 106)
NJM7912FA (IC104)



NJM7806FA(S) (IC101, 105)
NJM7812FA(S) (IC103)



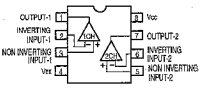
SI-18751
(IC201, 301, 302)



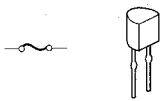
1. +IN
2. −IN
3. −VEE
4. Output
5. +Vcc

● IC PROTECTOR

M5218P (IC401, 404, 406, 412, 503, 504, 701, 702)

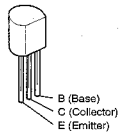


ICP-N15 (IP101, 102)

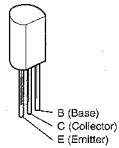


● TRANSISTORS

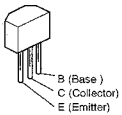
2SC1815 (BL)
2SC1841 (E/F)
2SC2878 (A/B)
2SD1111
2SD1292 (Q)



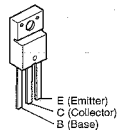
2SB647A (C)
2SD667A (C)



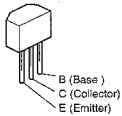
2SA1048 (GR)
2SC2458 (BL)



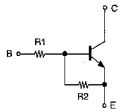
2SD1207



DTC114ES (10k-10k)
RN1202 (10k-10k)
RN1204 (47k-47k)
RN1241 (5.6k)
RN2202 (10k-10k)

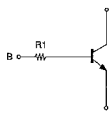


DTC114ES (10k-10k)
RN1202 (10k-10k)
RN1204 (47k-47k)



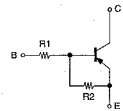
	R1	R2
DTA114ES	10kohm	10kohm
RN1202	10kohm	10kohm
RN1204	47kohm	47kohm

RN1241



	R1
RN1241	5.6kohm

RN2202 (10k-10k)



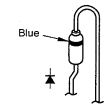
	R1	R2
RN2202	10kohm	10kohm

● DIODES (Included LED)

HZS5B-2
HZS6B-1
HZS9B-1

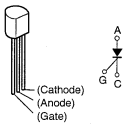
1SS270A

1SR35-200
1SR35-200A

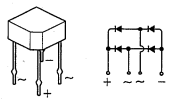


	Lead Diameter
1SR35-200	ϕ 0.8
1SR35-200A	ϕ 0.6

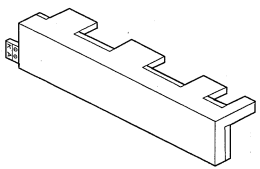
SF0R3G
(Thyristor)
(D110)

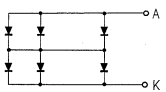


4D4B41
(D107)



LED Ass'y (D801) for back light
Part No.: 393 9470 009

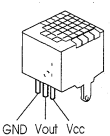


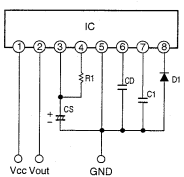


2 in series, 22 parallel = 44 chips

● Remote Control Sensor

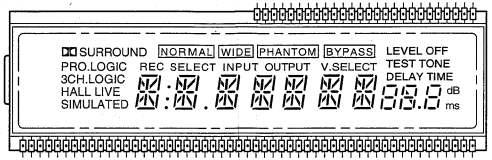
SPS-420-1

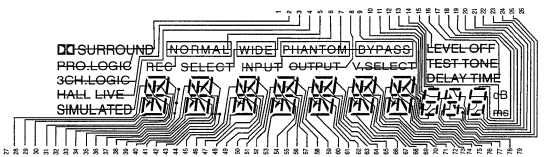


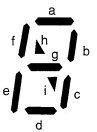


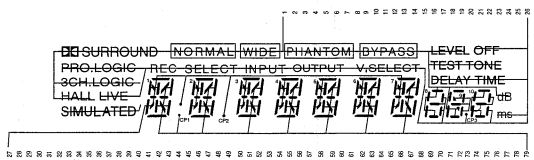
Note:
C1 = 332 - 103 (472)
C0 = 103 - 223 (223)
R1 = 120k - 140k (130k)
CS = 22μF

LCD Ass'y (LC801)
(8195JP) Part No. 393 4121 007









WIRING TABLE

NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
COM1	—	PRO LOGIC	LIVE	SIMULATED	REC	SELECT	INPUT	OUTPUT	V.SELECT	8c	8g	8b	—	ms	OFF	DELAY TIME	—	10b	10c	10g	9b	9c	DP3	9g	9h	COM
COM2	COM	1)	3CH LOGIC	HALL	NORMAL	WIDE	PHANTOM	BYPASS	—	8d	8e	8f	8a	dB	LEVEL	TEST TONE	10a	10f	10d	10e	9a	9f	9d	9e	9f	—

NO	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
COM3	COM	1f	1n	1e	1g	1h	Il	1a	COL	2f	2n	2e	2g	2h	2l	2a	DP2	3f	3n	3e	3g	3h	3i	3a	4f	4n	4e
COM4	—	1l	1m	1d	1c	1k	1j	1b	DP1	2l	2m	2d	2c	2k	2j	2b	—	3l	3m	3d	3c	3k	3j	3b	4l	4m	4d

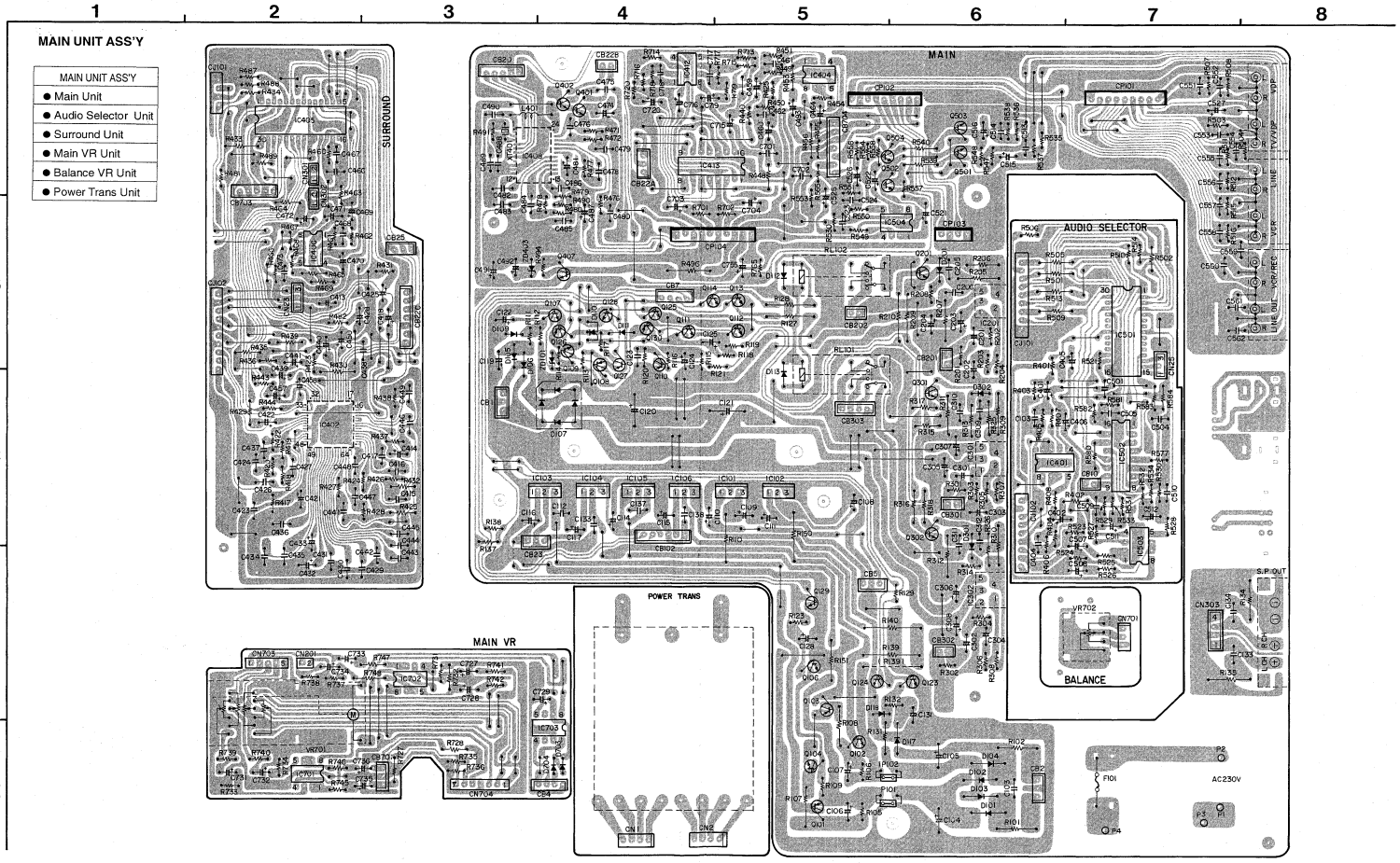
NO	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
COM3	4g	4h	4i	4a	5f	5n	5e	5g	5h	5i	5a	6f	6n	6e	6g	6h	6i	6a	7f	7n	7a	7g	7h	7i	7a	—
COM4	4c	4k	4j	4b	5l	5m	5d	5c	5k	5j	5b	6l	6m	6d	6c	6k	6j	6b	7l	7m	7d	7c	7k	7j	7b	COM

1) SURROUND

PRINTED WIRING BOARD (Pattern Side)

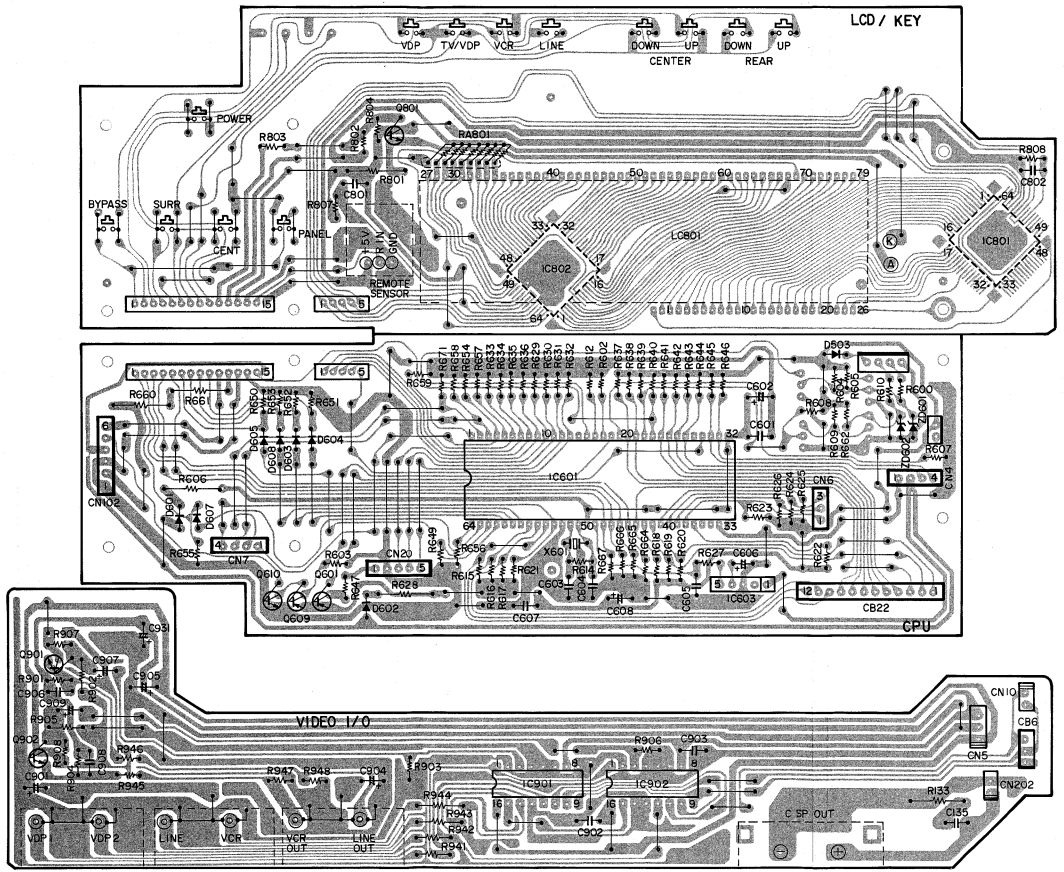
MAIN UNIT ASS'Y

MAIN UNIT ASS'Y
● Main Unit
● Audio Selector Unit
● Surround Unit
● Main VR Unit
● Balance VR Unit
● Power Trans Unit



SUB UNIT ASS'Y

SUB UNIT ASS'Y
● Video I/O Unit
● Front CPU Unit
● LCD, Key Unit



NOTE FOR PARTS LIST

- Part indicated with the mark " ◉ " are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:

Parts marked with this symbol ⚠ ▒▒ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

● Resistors

Ex.: RN (Type) 14K (Shape and performance) 2E (Power) 182 (Resistance) G (Allowable error) FR (Others)

RD : Carbon RC : Composition RS : Metal oxide film RW : Winding RN : Metal film RK : Metal mixture	2B : 1/8W 2E : 1/4W 2H : 1/2W 3A : 1W 3D : 2W 3F : 3W 3H : 5W	F : ±1% G : ±2% J : ±5% K : ±10% M : ±20%	P : Pulse-resistant type NL : Low noise type NB : Non-burning type FR : Fuse-resistor F : Lead wire forming

• Resistance

1 8 2 ⇒ 1800 ohm = 1.8 kohm
(1) Indicates number of zeros after effective number.
(2) 2-digit effective number.
• Units: ohm

1 R 2 ⇒ 1.2 ohm
(1) 1-digit effective number.
(2) 2-digit effective number, decimal point indicated by R.
• Units: ohm

● Capacitors

Ex.: CE (Type) 04W (Shape and performance) 1H (Dielectric strength) 2R2 (Capacity) M (Allowable error) BP (Others)

CE : Aluminum foil electrolytic CA : Aluminum solid electrolytic CS : Tantalum electrolytic CQ : Film CK : Ceramic CC : Ceramic CP : Oil CM : Mica CF : Metallized CH : Metallized	0J : 6.3V 1A : 10V 1C : 16V 1E : 25V 1V : 35V 1H : 50V 2A : 100V 2B : 125V 2C : 160V 2D : 200V 2E : 250V 2H : 500V 2J : 630V	F : ±1% G : ±2% J : ±5% K : ±10% M : ±20% Z : +80% −20% P : +100% −0% C : ±0.25pF D : ±0.5pF = : Others	HS : High stability type BP : Non-polar type HR : Ripple-resistant type DL : For charge and discharge HF : For assuring high frequency U : UL part C : CSA part W : UL-CSA type F : Lead wire forming

• Capacity (electrolyte only)

2 2 2 ⇒ 2200μF
(1) Indicates number of zeros after effective number.
(2) 2-digit effective number.
• Units: μF.

2 R 2 ⇒ 2.2μF
(1) 1-digit effective number.
(2) 2-digit effective number, decimal point indicated by R.
• Units: μF.

• Capacity (except electrolyte)

2 2 2 ⇒ 2200pF = 0.0022μF
(More than 2) Indicates number of zeros after effective number.
2-digit effective number.
• Units: μF.

2 2 1 ⇒ 220pF
(0 or 1) Indicates number of zeros after effective number.
2-digit effective number.
• Units: pF.

• When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

P.W.B. PARTS LIST

MAIN UNIT ASS'Y (Parts No. AVC 7700 191)

Ref. No.	Parts No.	Parts Name	Remarks
MAIN UNIT			
SEMICONDUCTORS GROUP			
IC101	262 1071 005	IC NJM7806FA	Regulator +6 V
IC102	263 0683 002	IC NJM7906FA	Regulator −6 V
IC103	263 0516 001	IC NJM7812FA	Regulator +12 V
IC104	263 0641 002	IC NJM7912FA	Regulator −12 V
IC105	262 1071 005	IC NJM7806FA	Regulator +6 V
IC106	263 0683 002	IC NJM7906FA	Regulator −6 V
IC201	263 0985 001	IC SI18751	Power Amp
IC301,302	263 0985 001	IC SI18751	Power Amp
IC404	263 0711 000	IC M5218AP	OP Amp
IC408	262 1874 008	IC NJU9701M	Delay
IC412	263 0711 000	IC M5218AP	OP Amp
IC413	262 0625 009	IC TC9176P	ATT
IC504	263 0711 000	IC M5218AP	OP Amp
Q101	272 0053 908	Transistor 2SB647A (C)	
Q102	274 0060 007	Transistor 2SD667A (C)	
Q103	271 0191 906	Transistor 2SA1048 (GR)	
Q104	273 0317 906	Transistor 2SC2458 BL	
Q106	269 0025 008	Transistor RN1202	Built in Resistor
Q107	273 0253 015	Transistor 2SC2878 A/B	
Q108	269 0026 007	Transistor RN2202	Built in Resistor
Q109	273 0317 906	Transistor 2SC2458 BL	
Q110	271 0191 906	Transistor 2SA1048 (GR)	
Q111	274 0111 008	Transistor 2SD1111	
Q112	273 0317 906	Transistor 2SC2458 BL	
Q113,114	269 0025 008	Transistor RN1202	Built in Resistor
Q123	273 0253 015	Transistor 2SC2878 A/B	
Q124	269 0029 004	Transistor RN1204	Built in Resistor
Q125	269 0025 008	Transistor RN1202	Built in Resistor
Q126	269 0029 004	Transistor RN1204	Built in Resistor
Q127	269 0026 007	Transistor RN2202	Built in Resistor
Q128,129	269 0029 004	Transistor RN1204	Built in Resistor
Q130	271 0191 906	Transistor 2SA1048 (GR)	
Q201	273 0235 020	Transistor 2SC1841 (E/F)	
Q301,302	273 0235 020	Transistor 2SC1841 (E/F)	
Q401,402	269 0020 003	Transistor DTC114ES	Built in Resistor
Q407	274 0169 005	Transistor 2SD1292(R)	
Q501−504	269 0107 900	Transistor RN1241	Built in Resistor
D101−104	276 0519 004	Diode 1SR35-200	Forming Type
D105,106	276 0519 004	Diode 1SR35-200A	
⚠D107	AVC 7700 172	Diode 4D4B41	Bridge
D109	276 0432 000	Diode 1SS270A	
D110	AVC 7700 171	Thyristor FOR3G	
D111−113	276 0432 000	Diode 1SS270A	
D117	276 0519 004	Diode 1SR35-200	
D118	276 0432 000	Diode 1SS270A	
D201	276 0432 000	Diode 1SS270A	
D301,302	276 0432 000	Diode 1SS270A	
ZD101	276 0468 906	Zener Diode HZS9B-1	9 V
ZD102	276 0459 915	Zener Diode HZS5B-2	5 V
ZD403	276 0462 902	Zener Diode HZS6B-1	6 V
IP101,102	268 0073 905	IC Protector ICP-N15	IC Protector
RESISTORS GROUP (Not included Carbon Film ±5%, 1/4W Type, Refer to the Schematic Diagram for those Parts.)			
R105,106	241 2402 058	Carbon Film 47kohm 1/6W	RD14B--473J(5)
R109	241 2401 075	Carbon Film 22kohm 1/6W	RD14B--223J(5)
R111	241 2401 091	Carbon Film 27kohm 1/6W	RD14B--273J(5)
R112	241 2402 032	Carbon Film 39kohm 1/6W	RD14B--393J(5)
R113	241 2403 934	Carbon Film 100kohm 1/6W	RD14B--104J(5)
R114	241 2402 919	Carbon Film 33kohm 1/6W	RD14B--333J(5)
R115	241 2398 955	Carbon Film 1kohm 1/6W	RD14B--102J(5)
R116	241 2400 092	Carbon Film 10kohm 1/6W	RD14B--103J(5)
R118	241 2404 098	Carbon Film 470kohm 1/6W	RD14B--474J(5)
R119	241 2402 919	Carbon Film 33kohm 1/6W	RD14B--333J(5)
R120	241 2400 092	Carbon Film 10kohm 1/6W	RD14B--103J(5)
R121	241 2398 955	Carbon Film 1kohm 1/6W	RD14B--102J(5)
R123	241 2398 955	Carbon Film 1kohm 1/6W	RD14B--102J(5)
R129	241 2400 018	Carbon Film 4.7kohm 1/6W	RD14B--472J(5)
R131	241 2401 075	Carbon Film 22kohm 1/6W	RD14B--223J(5)
R132	241 2400 092	Carbon Film 10kohm 1/6W	RD14B--103J(5)
R137	241 2400 018	Carbon Film 4.7kohm 1/6W	RD14B--472J(5)
R138	241 2400 092	Carbon Film 10kohm 1/6W	RD14B--103J(5)
R201	241 2405 974	Carbon Film 1Mohm 1/6W	RD14B--105J(5)
R202	241 2401 075	Carbon Film 22kohm 1/6W	RD14B--223J(5)
R202	241 2398 955	Carbon Film 1kohm 1/6W	RD14B--102J(5)
R204	241 2401 062	Carbon Film 20kohm 1/6W	RD14B--203J(5)
R208	241 2401 091	Carbon Film 27kohm 1/6W	RD14B--273J(5)
R209,210	241 2402 919	Carbon Film 33kohm 1/6W	RD14B--333J(5)
R301,302	241 2405 974	Carbon Film 1Mohm 1/6W	RD14B--105J(5)
R303,304	241 2401 075	Carbon Film 22kohm 1/6W	RD14B--223J(5)
R305,306	241 2398 955	Carbon Film 1kohm 1/6W	RD14B--102J(5)
R307,308	241 2401 062	Carbon Film 20kohm 1/6W	RD14B--203J(5)
R313,314	241 2401 075	Carbon Film 22kohm 1/6W	RD14B--223J(5)
R315−318	241 2402 919	Carbon Film 33kohm 1/6W	RD14B--333J(5)
R425	241 2396 025	Carbon Film 100ohm 1/6W	RD14B--101J(5)
R440	241 2397 079	Carbon Film 470ohm 1/6W	RD14B--471J(5)
R448	241 2397 079	Carbon Film 470ohm 1/6W	RD14B--471J(5)
R449,450	241 2403 934	Carbon Film 100kohm 1/6W	RD14B--104J(5)
R451	241 2396 025	Carbon Film 100ohm 1/6W	RD14B--101J(5)
R453,454	241 2396 025	Carbon Film 100ohm 1/6W	RD14B--101J(5)

Ref. No.	Parts No.	Parts Name	Remarks
R455,456	241 2403 934	Carbon Film 100kohm 1/6W	RD14B--104J(5)
R471	241 2401 059	Carbon Film 18kohm 1/6W	RD14B--183J(5)
R472	241 2400 034	Carbon Film 5.6kohm 1/6W	RD14B--562J(5)
R476	241 2400 063	Carbon Film 7.5kohm 1/6W	RD14B--752J(5)
R477,478	241 2394 959	Carbon Film 20ohm 1/6W	RD14B--200J(5)
R479	241 2401 059	Carbon Film 18kohm 1/6W	RD14B--183J(5)
R480	241 2401 033	Carbon Film 15kohm 1/6W	RD14B--153J(5)
R490	241 2401 033	Carbon Film 15kohm 1/6W	RD14B--153J(5)
R491	241 2405 974	Carbon Film 1Mohm 1/6W	RD14B--105J(5)
R494	241 2398 955	Carbon Film 1kohm 1/6W	RD14B--102J(5)
R501,502	241 2397 079	Carbon Film 470ohm 1/6W	RD14B--471J(5)
R503,504	241 2405 974	Carbon Film 1Mohm 1/6W	RD14B--105J(5)
R505,506	241 2397 079	Carbon Film 470ohm 1/6W	RD14B--471J(5)
R507,508	241 2405 974	Carbon Film 1Mohm 1/6W	RD14B--105J(5)
R509,510	241 2397 079	Carbon Film 470ohm 1/6W	RD14B--471J(5)
R511,512	241 2405 974	Carbon Film 1Mohm 1/6W	RD14B--105J(5)
R513,514	241 2397 079	Carbon Film 470ohm 1/6W	RD14B--471J(5)
R515,516	241 2403 015	Carbon Film 82kohm 1/6W	RD14B--823J(5)
R530	241 2403 934	Carbon Film 100kohm 1/6W	RD14B--104J(5)
R535,536	241 2393 028	Carbon Film 5.6ohm 1/6W	RD14B--5R6J(5)
R537,538	241 2404 098	Carbon Film 470kohm 1/6W	RD14B--474J(5)
R539,540	241 2398 955	Carbon Film 1kohm 1/6W	RD14B--102J(5)
R547,548	241 2402 058	Carbon Film 47kohm 1/6W	RD14B--473J(5)
R549,550	241 2396 025	Carbon Film 100ohm 1/6W	RD14B--101J(5)
R551	241 2403 934	Carbon Film 100kohm 1/6W	RD14B--104J(5)
R553,554	241 2405 974	Carbon Film 1Mohm 1/6W	RD14B--105J(5)
R555,556	241 2397 079	Carbon Film 470ohm 1/6W	RD14B--471J(5)
R557,559	241 2398 955	Carbon Film 1kohm 1/6W	RD14B--102J(5)
R701,702	241 2403 934	Carbon Film 100kohm 1/6W	RD14B--104J(5)
R713,714	241 2404 014	Carbon Film 220kohm 1/6W	RD14B--224J(5)
R715,716	241 2399 022	Carbon Film 2kohm 1/6W	RD14B--202J(5)
R717	241 2400 005	Carbon Film 4.3kohm 1/6W	RD14B--432J(5)
R718	241 2400 063	Carbon Film 7.5kohm 1/6W	RD14B--752J(5)
R719,720	241 2396 025	Carbon Film 100ohm 1/6W	RD14B--101J(5)
R765	241 2405 932	Carbon Film 680kohm 1/6W	RD14B--684J(5)
⚠ R101,102	244 2043 962	Metal Oxide 0.22ohm 1W (NB)	RS14B3AR22JNBF
⚠ R107,108	244 0044 006	Metal Oxide 1.6kohm 1W (NB)	RS14B3A162JNB
⚠ R110	244 0023 001	Metal Oxide 33ohm 1W (NB)	RS14B3A330JNBF
⚠ R127,128	244 0035 004	Metal Oxide 220ohm 1W (NB)	RS14B3A221JNBF
⚠ R134,135	244 0017 004	Metal Oxide 10ohm 1W (NB)	RS14B3A100JNBF
⚠ R139,140	244 0012 009	Metal Oxide 3.9ohm 1W (NB)	RS14B3A3R9JNBF
⚠ R150	244 0023 001	Metal Oxide 33ohm 1W (NB)	RS14B3A330JNBF
⚠ R151	244 0022 002	Metal Oxide 27ohm 1W (NB)	RS14B3A270JNB
⚠ R205	AVC 7700 175	Cement Resistor 0.33ohm 2W	RW=3DR33J
⚠ R206	244 2043 047	Metal Oxide 2.2kohm 1W (NB)	RS14B3A222JNBF(S)
⚠ R207	244 0017 004	Metal Oxide 10ohm 1W (NB)	RS14B3A100JNBF
⚠ R309,310	AVC 7700 176	Cement Resistor 0.47ohm 2W	RW=3DR47J
⚠ R311,312	244 0017 004	Metal Oxide 10ohm 1W (NB)	RS14B3A100JNBF
⚠ R325,326	244 2043 047	Metal Oxide 2.2kohm 1W (NB)	RS14B3A222JNBF(S)
⚠ R496	244 2051 987	Metal Oxide 4.7ohm 1W (NB)	RS14B3A4R7JNBF

Ref. No.	Parts No.	Parts Name	Remarks
CAPACITORS GROUP			
⚠ C102	HMA 5000 613	Metalized Cap. 0.01μF/250 V	CF93A2E103(K)
C103	255 1122 040	Mylar Film Cap. 0.1μF/50 V	CQ93M1H104J
C104,105	254 4259 001	Electrolytic 2200 μF/35 V	CE04W1V222M
C106,107	254 4194 917	Electrolytic 10 μF/25 V	CE04W1E100M(SRA)
C108,109	254 4196 041	Electrolytic 1 μF/50 V	CE04W1H010M(SRA)
C110,111	254 4193 002	Electrolytic 10 μF/16 V	CE04W1C100M(SRA)
C112,113	AVC 7700 173	Ceramic Cap. 0.1μF/50 V	CK14=104AX
C114,115	254 4193 002	Electrolytic 10 μF/16 V	CE04W1C100M(SRA)
C116,117	254 4294 056	Electrolytic 100 μF/25 V	CE04W1E101M(SRA)
C119	254 4206 087	Electrolytic 10 μF/50 V	CE04W1H100M
C120,121	254 4323 704	Electrolytic 4700 μF/50 V	CE04W1H472MC
C122	254 4206 087	Electrolytic 10 μF/50 V	CE04W1H100M
C123	255 1265 936	Mylar Film Cap. 0.01μF/50 V	CQ93M1H103J(B)
C124	254 4206 087	Electrolytic 10 μF/50 V	CE04W1H100M
C125	254 4213 034	Electrolytic 100 μF/6.3 V	CE04W0J101M(SRA)
C128	254 4193 002	Electrolytic 10 μF/16 V	CE04W1C100M(SRA)
C131	254 3056 946	Electrolytic 4.7μF/50 V (Bipolar)	CE04D1H4R7MBP
C133,134	255 1265 978	Mylar Film Cap. 0.022μF/50 V	CQ93M1H223J(B)
C137,138	AVC 7700 173	Ceramic Cap. 0.1μF/50 V	CK14=104AX
C201	254 3068 918	Electrolytic 2.2μF/50 V (Bipolar)	CE04D1H2R2MBP
C202	254 3052 908	Electrolytic 22 μF/10 V (Bipolar)	CE04D1A220MBP
C203,204	254 4196 009	Electrolytic 0.1μF/50 V	CE04W1H0R1M(SRA)
C205	255 1265 936	Mylar Film Cap. 0.01μF/50 V	CQ93M1H103J(B)
C301,302	254 3068 918	Electrolytic 2.2μF/50 V (Bipolar)	CE04D1H2R2MBP
C303,304	254 3052 908	Electrolytic 22 μF/10 V (Bipolar)	CE04D1A220MBP
C305~308	254 4196 009	Electrolytic 0.1μF/50 V	CE04W1H0R1M(SRA)
C309	255 1265 936	Mylar Film Cap. 0.01μF/50 V	CQ93M1H103J(B)
C310,311	255 1122 040	Mylar Film Cap. 0.1μF/50 V	CQ93M1H104J
C312	255 1265 936	Mylar Film Cap. 0.01μF/50 V	CQ93M1H103J(B)
C459,460	254 4193 002	Electrolytic 10 μF/16 V	CE04W1C100M(SRA)
C461,462	AVC 7700 146	Ceramic Cap. 100 pF/50 V	CK14=101AX
C463,464	254 4193 002	Electrolytic 10 μF/16 V	CE04W1C100M(SRA)
C474	254 4193 002	Electrolytic 10 μF/16 V	CE04W1C100M(SRA)
C475	255 1122 087	Mylar Film Cap. 0.22μF/50 V	CQ93M1H224J
C476	255 1249 907	Mylar Film Cap. 470 pF/50 V	CQ93M1H471J(B)
C478	255 1120 040	Mylar Film Cap. 0.1μF/50 V	CQ93M1H104J
C479,480	255 1264 995	Mylar Film Cap. 0.0056μF/50 V	CQ93M1H562J(B)
C481	254 4193 031	Electrolytic 47 μF/16 V	CE04W1C470M(SRA)
C482,483	255 1122 008	Mylar Film Cap. 0.047μF/50 V	CQ93M1H473J
C484	255 1120 040	Mylar Film Cap. 0.1μF/50 V	CQ93M1H104J
C485	255 1264 966	Mylar Film Cap. 0.0033μF/50 V	CQ93M1H332J(B)
C486	255 1249 907	Mylar Film Cap. 470 pF/10 V	CQ93M1H471J(B)
C487	254 4196 041	Electrolytic 1 μF/50 V	CE04W1H010M(SRA)
C488,489	AVC 7700 174	Ceramic Cap. 220 pF/50 V (Temp.)	CC45=221NPO
C490	AVC 7700 173	Ceramic Cap. 0.1μF/50 V	CK14=104AX
C491	254 4192 935	Electrolytic 100 μF/10 V	CE04W1A101M(SRA)
C492	254 4193 002	Electrolytic 10 μF/16 V	CE04W1C100M(SRA)

Ref. No.	Parts No.	Parts Name	Remarks
C513,514	AVC 7700 146	Ceramic Cap. 100 pF/50 V	CK14==101AX
C515,516	254 4196 041	Electrolytic 1 µF/50 V	CE04W1H010M(SRA)
C521,522	254 4196 041	Electrolytic 1 µF/50 V	CE04W1H010M(SRA)
C523,524	AVC 7700 146	Ceramic Cap. 100 pF/50 V	CK14==101AX
C525~527	254 4196 041	Electrolytic 1 µF/50 V	CE04W1H010M(SRA)
C551~562	AVC 7700 146	Ceramic Cap. 100 pF/50 V	CK14==101AX
C701,702	AVC 7700 147	Ceramic Cap. 0.022µF/50 V	CK14==223AX
C703,704	254 4193 002	Electrolytic 10 µF/16 V	CE04W1C100M(SRA)
C715,716	254 4193 002	Electrolytic 10 µF/16 V	CE04W1C100M(SRA)
C717,718	AVC 7700 146	Ceramic Cap. 100 pF/50 V	CK14==101AX
C719,720	254 4193 002	Electrolytic 10 µF/16 V	CE04W1C100M(SRA)

OTHER GROUP				Q'ty
	—	(P.W.Board)		(1)
RL101,102	214 0154 005	Output Relay VB24STB	or VB24SMB	2
	204 8266 008	4 P Pin Jack(S-GND)	White/Red	3
	205 0592 029	4 P Speaker Terminal		1
F101	205 4001 015	Fuse 250mA/250 V	20 mm	1
	202 0022 008	Fuse Clip		2
XT401	399 0223 907	Ceramic Resonator	CSA 2.00 MHz	1
L401	235 0060 989	Inductor 120 µH		1
	AVC 7700 177	IC Spacer	for IC201,301, 302	3
CB22B	AVC 7700 169	2 P EH Conn. Base		1
CB201	AVC 7700 169	2 P EH Conn. Base		1
CB301,302	AVC 7700 169	2 P EH Conn. Base		2
CB202	AVC 7700 182	2 P XH Conn. Base		1
CB002,005	AVC 7700 153	3 P EH Conn. Base		2
CB22A,23	AVC 7700 153	3 P EH Conn. Base		2
CB001	AVC 7700 184	3 P XH Conn. Base		1
CB007	AVC 7700 185	4 P EH Conn. Base		1
CB301	AVC 7700 186	4 P XH Conn. Base		1
CB020	AVC 7700 154	5 P EH Conn. Base		1
CB102	AVC 7700 188	6 P EH Conn. Base		1
CB704	AVC 7700 155	7 P EH Conn. Base		1
	AVC 7700 178	4 P Dip Socket	MSA9130B-4	1
	AVC 7700 179	9 P Dip Socket	MSA9130B-9	2
	AVC 7700 180	10 P Dip Socket	MSA9130B-10	1
	—	Connector Pin	L=10	4

AUDIO SELECTOR UNIT

Ref. No.	Parts No.	Parts Name	Remarks
SEMICONDUCTORS GROUP			
IC401	263 0711 000	IC M5218AP	
IC501	262 1227 008	IC LC7821	
IC502	262 1096 006	IC TC40526P	
IC503	263 0711 000	IC M5218AP	

RESISTORS GROUP (Not included Carbon Film ±5%, 1/4W Type, Refer to the Schematic Diagram for those Parts.)			
R401,402	241 2397 972	Carbon Film 470ohm 1/6W	RD14B--471J(5)
R403,404	241 2403 073	Carbon Film 150kohm 1/6W	RD14B--154J(5)
R405,406	241 2404 098	Carbon Film 470kohm 1/6W	RD14B--474J(5)
R407,408	241 2396 025	Carbon Film 100ohm 1/6W	RD14B--101J(5)
R521	241 2405 039	Carbon Film 680kohm 1/6W	RD14B--684J(5)
R523,524	241 2404 098	Carbon Film 470kohm 1/6W	RD14B--474J(5)
R525~528	241 2396 025	Carbon Film 100ohm 1/6W	RD14B--101J(5)
R529,530	241 2403 934	Carbon Film 100kohm 1/6W	RD14B--104J(5)
R531,532	241 2397 972	Carbon Film 470ohm 1/6W	RD14B--471J(5)
R533,534	241 2405 974	Carbon Film 1Mohm 1/6W	RD14B--105J(5)
R577	241 2398 955	Carbon Film 1kohm 1/6W	RD14B--102J(5)
R580	241 2398 955	Carbon Film 1kohm 1/6W	RD14B--102J(5)
R581	241 2401 017	Carbon Film 12kohm 1/6W	RD14B--123J(5)
R582,583	241 2400 092	Carbon Film 10kohm 1/6W	RD14B--103J(5)
R584	241 2401 017	Carbon Film 12kohm 1/6W	RD14B--123J(5)

CAPACITORS GROUP			
C401,402	254 4193 002	Electrolytic 10 µF/16 V	CE04W1C100M(SRA)
C403,404	AVC 7700 146	Ceramic Cap. 100 pF/50 V	CK14==101AX
C405,406	254 4196 041	Electrolytic 1 µF/50 V	CE04W1H010M(SRA)
C501	AVC 7700 147	Ceramic Cap. 0.022µF/50 V	CK14==223AX
C504,505	AVC 7700 147	Ceramic Cap. 0.022µF/50 V	CK14==223AX
C507,508	254 4193 002	Electrolytic 10 µF/16 V	CE04W1C100M(SRA)
C509,510	AVC 7700 146	Ceramic Cap. 100 pF/50 V	CK14==101AX
C511,512	254 4196 041	Electrolytic 1 µF/50 V	CE04W1H010M(SRA)

OTHER GROUP				Q'ty
	—	(P.W.Board)		(1)
CB025	AVC 7700 169	2 P EH Connector Base		1
CB010	AVC 7700 153	3 P EH Connector Base		1
CJ101,102	AVC 7700 170	9 P Dip Socket	MSA 9131-9L	2

SURROUND UNIT

Ref. No.	Parts No.	Parts Name	Remarks
SEMICONDUCTORS GROUP			
IC402	283 0906 006	IC NJM2177A	
IC405	262 1228 007	IC LC7822	
IC406	283 0711 000	IC MS218AP	
RESISTORS GROUP (Not included Carbon Film ±5%, 1/4W Type, Refer to the Schematic Diagram for those Parts.)			
R417	241 2404 959	Carbon Film 330kohm 1/6W	RD14B-334J(5)
R418	241 2400 979	Carbon Film 8.2kohm 1/6W	RD14B-822J(5)
R419,420	241 2401 033	Carbon Film 15kohm 1/6W	RD14B-153J(5)
R422	245 2342 000	Metal Film 100kohm 1/6W	RN14K2E104F ±1%
R423	241 2403 934	Carbon Film 100kohm 1/6W	RD14B-104J(5)
R424	241 2400 083	Carbon Film 7.5kohm 1/6W	RD14B-752J(5)
R425	241 2401 033	Carbon Film 15kohm 1/6W	RD14B-153J(5)
R426	241 2402 058	Carbon Film 47kohm 1/6W	RD14B-473J(5)
R427	241 2400 083	Carbon Film 7.5kohm 1/6W	RD14B-752J(5)
R428	241 2402 058	Carbon Film 47kohm 1/6W	RD14B-473J(5)
R429	241 2400 979	Carbon Film 8.2kohm 1/6W	RD14B-822J(5)
R430	241 2402 074	Carbon Film 56kohm 1/6W	RD14B-563J(5)
R431	241 2403 934	Carbon Film 100kohm 1/6W	RD14B-104J(5)
R432	241 2401 033	Carbon Film 15kohm 1/6W	RD14B-153J(5)
R433,434	241 2396 025	Carbon Film 100ohm 1/6W	RD14B-101J(5)
R435,436	241 2402 058	Carbon Film 47kohm 1/6W	RD14B-473J(5)
R436	241 2403 934	Carbon Film 100kohm 1/6W	RD14B-104J(5)
R437	AVC 7700 148	Carbon Film 4.7Mohm 1/6W	RD14B-475J(5)
R438	241 2402 074	Carbon Film 56kohm 1/6W	RD14B-563J(5)
R439	241 2397 972	Carbon Film 470ohm 1/6W	RD14B-471J(5)
R443,444	241 2400 979	Carbon Film 8.2kohm 1/6W	RD14B-822J(5)
R456	241 2403 934	Carbon Film 100kohm 1/6W	RD14B-104J(5)
R460	AVC 7700 149	Metal Film 680kohm 1/6W	RN14K2E684F ±1%
R461	241 2400 092	Carbon Film 10kohm 1/6W	RD14B-103J(5)
R462	241 2397 972	Carbon Film 470ohm 1/6W	RD14B-471J(5)
R464	241 2397 972	Carbon Film 470ohm 1/6W	RD14B-471J(5)
R465	241 2400 092	Carbon Film 10kohm 1/6W	RD14B-103J(5)
R467,468	241 2396 025	Carbon Film 100ohm 1/6W	RD14B-101J(5)
R469	241 2404 086	Carbon Film 470kohm 1/6W	RD14B-474J(5)
R481,482	241 2396 025	Carbon Film 100ohm 1/6W	RD14B-101J(5)
R487–489	241 2398 052	Carbon Film 1kohm 1/6W	RD14B-102J(5)
CAPACITORS GROUP			
C413	254 4193 044	Electrolytic 100 µF/16 V	CE04W1C101M(SRA)
C414	AVC 7700 143	Electrolytic 22 µF/16 V	CE04W1C220M(LL)
C415	255 1084 007	Mylar Film Cap. 0.1µF/50 V	CQ93M1H104K
C416	255 1249 923	Mylar Film Cap. 680 pF/50 V	CQ93M1H681J(B)
C417	255 1122 008	Mylar Film Cap. 0.047µF/50 V	CQ93M1H473J
C418	254 4193 002	Electrolytic 10 µF/16 V	CE04W1C100M(SRA)
C421	254 4252 066	Electrolytic 470 µF/10 V	CE04W1A471M
C422	254 4196 041	Electrolytic 1 µF/50 V	CE04W1H010M(SRA)
C423	AVC 7700 144	Mylar Film Cap. 0.68µF/50 V	CQ93e1H684J
C424	255 1264 940	Mylar Film Cap. 2200 pF/50 V	CQ93M1H222J(B)
C425	254 4193 002	Electrolytic 10 µF/16 V	CE04W1C100M(SRA)
C426	255 1122 008	Mylar Film Cap. 0.047µF/50 V	CQ93M1H473J
C427	255 1249 907	Mylar Film Cap. 470 pF/50 V	CQ93M1H471J(B)
C428	254 4193 002	Electrolytic 10 µF/16 V	CE04W1C100M(SRA)

Ref. No.	Parts No.	Parts Name	Remarks
C429,430	255 1084 007	Mylar Film Cap. 0.1µF/50 V	CQ93M1H104K
C431	255 1088 003	Mylar Film Cap. 0.22µF/50 V	CQ93M1H224K
C432,433	254 4196 973	Electrolytic 4.7 µF/50 V	CE04W1H4R7M(SRA)
C434–436	255 1088 003	Mylar Film Cap. 0.22µF/50 V	CQ93M1H224K
C437	255 1264 995	Mylar Film Cap. 5600 pF/50 V	CQ93M1H562J(B)
C438	255 1264 982	Mylar Film Cap. 4700 pF/50 V	CQ93M1H472J(B)
C439	254 4193 002	Electrolytic 10 µF/16 V	CE04W1C100M(SRA)
C440	254 4193 015	Electrolytic 22 µF/16 V	CE04W1C220M(SRA)
C441	254 4193 002	Electrolytic 10 µF/16 V	CE04W1C100M(SRA)
C441–443	255 1084 007	Mylar Film Cap. 0.1µF/50 V	CQ93M1H104K
C444,445	255 1260 012	Mylar Film Cap. 0.022µF/50 V	CQ93M1H223J
C446	255 1084 007	Mylar Film Cap. 0.1µF/50 V	CQ93M1H104K
C447	255 1249 923	Mylar Film Cap. 680 pF/50 V	CQ93M1H681J(B)
C448	255 1122 008	Mylar Film Cap. 0.047µF/50 V	CQ93M1H473J
C449	255 1084 007	Mylar Film Cap. 0.1µF/50 V	CQ93M1H104K
C450	254 4192 935	Electrolytic 100 µF/10 V	CE04W1A101M(SRA)
C457,458	254 4196 041	Electrolytic 1 µF/50 V	CE04W1H010M(SRA)
C466,467	AVC 7700 147	Ceramic Cap. 0.022µF/50 V	CK14==223AX
C468	AVC 7700 145	Ceramic Cap. 10 pF/50 V	CK14==100AX
C469	254 4193 002	Electrolytic 10 µF/16 V	CE04W1C100M(SRA)
C470,471	254 4196 041	Electrolytic 1 µF/50 V	CE04W1H010M(SRA)
C472	254 4193 002	Electrolytic 10 µF/16 V	CE04W1C100M(SRA)
C473	AVC 7700 146	Ceramic Cap. 100 pF/50 V	CK14==101AX
OTHER GROUP			**Q'ty**
	—	(P.W.Board)	(1)
CB22A	AVC 7700 153	3 P EH Connector Base	2
CB703	AVC 7700 154	5 P EH Connector Base	1
CB22C	AVC 7700 155	7 P EH Connector Base	1
CN301	AVC 7700 194	3 P Connector	L=150 1
CN302	AVC 7700 195	3 P Connector	L=180 1
CJ103	AVC 7700 150	4 P Dip Socket	MSA 9131-4L 1
CJ104	AVC 7700 151	10 P Dip Socket	MSA 9131-10L 1

MAIN VR. BALANCE VR UNIT

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
SEMICONDUCTORS GROUP				
IC701,702	263 0711 000	IC M5218AP		
IC703	AVC 7700 159	IC LB1630		
D703,704	276 0432 000	Diode 1SS270A		
RESISTORS GROUP (Not included Carbon Film ±5%, 1/4W Type, Refer to the Schematic Diagram for those Parts.)				
R727,728	241 2397 972	Carbon Film 470ohm 1/6W	RD14B--471J(5)	
R731~734	241 2405 958	Carbon Film 820kohm 1/6W	RD14B--824J(5)	
R735~738	241 2403 934	Carbon Film 100kohm 1/6W	RD14B--104J(5)	
R739~742	241 2397 972	Carbon Film 470ohm 1/6W	RD14B--471J(5)	
R745~748	241 2396 025	Carbon Film 100ohm 1/6W	RD14B--101J(5)	
VR701	AVC 7700 160	Variable Resistor 100kohm	Main	
VR702	AVC 7700 161	Variable Resistor 100kohm	Balance	
CAPACITORS GROUP				
C728,729	254 4196 041	Electrolytic 1 μF/50 V	CE04W1H010M(SRA)	
C729	254 4192 922	Electrolytic 47 μF/10 V	CE04W1A470M(SRA)	
C731,732	254 4196 041	Electrolytic 1 μF/50 V	CE04W1H010M(SRA)	
C733~736	254 4196 957	Electrolytic 2.2 μF/50 V	CE04W1H2R2M(SRA)	
OTHER GROUP				Q'ty
	—	(P.W.Board)		(1)
CB701	AVC 7700 153	3 P EH Connector Base		1
CN201	AVC 7700 193	2 P Connector	L=300	1
CN701	AVC 7700 136	3 P Connector	L=100	1
CN004	AVC 7700 135	4 P Connector	L=150	1
CN703	AVC 7700 137	5 P Connector	L=200	1
CN704	AVC 7700 138	7 P Connector	L=100	1

POWER TRANS UNIT

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
OTHER GROUP				
	—	(P.W.Board)		(1)

SUB UNIT ASS'Y (Parts No. AVC 7700 192)

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
VIDEO I/O UNIT				
SEMICONDUCTORS GROUP				
IC901,902	262 1108 004	IC TC4051BP		
Q901,902	273 0198 015	Transistor 2SC1815 (BL)		
RESISTORS GROUP (Not included Carbon Film ±5%, 1/4W Type, Refer to the Schematic Diagram for those Parts.)				
R901	241 2397 053	Carbon Film 360ohm 1/6W	RD14B--361J(5)	
R902	241 2379 064	Carbon Film 3kohm 1/6W	RD14B--302J(5)	
R903	241 2403 934	Carbon Film 100kohm 1/6W	RD14B--104J(5)	
R904	241 2397 053	Carbon Film 360ohm 1/6W	RD14B--361J(5)	
R905	241 2379 064	Carbon Film 3kohm 1/6W	RD14B--302J(5)	
R906	241 2403 934	Carbon Film 100kohm 1/6W	RD14B--104J(5)	
R907,908	241 2401 062	Carbon Film 20kohm 1/6W	RD14B--203J(5)	
R941~944	241 2396 025	Carbon Film 100ohm 1/6W	RD14B--101J(5)	
R945,946	241 2395 068	Carbon Film 56ohm 1/6W	RD14B--560J(5)	
R947,948	241 2401 075	Carbon Film 22kohm 1/6W	RD14B--223J(5)	
⚠R133	241 2375 997	Carbon Film 10ohm 1W (NB)	RD14B2E100JNB	
CAPACITORS GROUP				
C133	255 1260 012	Mylar Film Cap. 0.022μF/50 V	CQ93M1H223J(B)F	
C901	254 4196 041	Electrolytic 1 μF/50 V	CE04W1H010M(SRA)	
C902,903	AVC 7700 133	Ceramic Cap. 0.01μF/50 V	CK14==103AX	
C904	254 4196 041	Electrolytic 1 μF/50 V	CE04W1H010M(SRA)	
C905	254 4252 079	Electrolytic 1000 μF/10 V	CE04W1A102M	
C906	AVC 7700 156	Ceramic Cap. 470 pF/50 V	CK14==471AX	
C907	254 4192 935	Electrolytic 100 μF/10 V	CE04W1A101M(SRA)	
C908	AVC 7700 156	Ceramic Cap. 470 pF/50 V	CK14==471AX	
C909	254 4192 935	Electrolytic 100 μF/10 V	CE04W1A101M(SRA)	
C931	254 4252 079	Electrolytic 1000 μF/10 V	CE04W1A102M	
OTHER GROUP				Q'ty
	—	(P.W.Board)		(1)
	204 8360 001	2 P Pin Jack (S-GND)		3
	205 0695 007	2 P Speaker Terminal	Red/Black	1
CB006	AVC 7700 153	3 P EH Connector Base		1
CN010	AVC 7700 164	2 P Connector	L=280	1
CN005	AVC 7700 162	3 P Connector	L=250	1
CN201	AVC 7700 193	2 P Connector	L=300	1

FRONT(CPU) UNIT

Ref. No.	Parts No.	Parts Name	Remarks
SEMICONDUCTORS GROUP			
IC601	262 2048 008	IC HD404019RC52S	μ-com
IC603	AVC 7700 131	IC M51954AL	
Q601	269 0026 007	Transistor RN2202	Built in Resistor
Q602	269 0029 004	Transistor RN1204	Built in Resistor
Q609	269 0026 007	Transistor RN2202	Built in Resistor
Q610	269 0025 008	Transistor RN1202	Built in Resistor
D601~605	276 0432 000	Diode 1SS270A	
D607,608	276 0432 000	Diode 1SS270A	
D610,611	276 0432 000	Diode 1SS270A	
RESISTORS GROUP (Not included Carbon Film ±5%, 1/4W Type, Refer to the Schematic Diagram for those Parts.)			
R600	241 2398 955	Carbon Film 1kohm 1/6W	RD14B--102J(5)
R602,603	241 2400 092	Carbon Film 10kohm 1/6W	RD14B--103J(5)
R607	241 2400 092	Carbon Film 10kohm 1/6W	RD14B--103J(5)
R612	241 2400 092	Carbon Film 10kohm 1/6W	RD14B--103J(5)
R615~626	241 2400 092	Carbon Film 10kohm 1/6W	RD14B--103J(5)
R627	241 2393 086	Carbon Film 10ohm 1/6W	RD14B--100J(5)
R629~646	241 2400 092	Carbon Film 10kohm 1/6W	RD14B--103J(5)
R647	241 2400 018	Carbon Film 4.7kohm 1/6W	RD14B--472J(5)
R649~655	241 2403 934	Carbon Film 100kohm 1/6W	RD14B--104J(5)
R656	241 2400 092	Carbon Film 10kohm 1/6W	RD14B--103J(5)
R657~659	241 2403 934	Carbon Film 100kohm 1/6W	RD14B--104J(5)
R664~667	241 2402 058	Carbon Film 47kohm 1/6W	RD14B--473J(5)
R671	241 2403 934	Carbon Film 100kohm 1/6W	RD14B--104J(5)
⚠ R606	244 0069 009	Metal Oxide 2.2ohm 1W(NB)	RS14B3A2R2JNBS(S)
⚠ R628	244 0069 009	Metal Oxide 2.2ohm 1W(NB)	RS14B3A2R2JNBS(S)
⚠ R660,661	244 2044 004	Metal Oxide 4.7ohm 1W(NB)	RS14B3A4R7JNBS
CAPACITORS GROUP			
C601	AVC 7700 133	Ceramic Cap. 0.01μF/50 V	CK14==103AX
C602	259 0007 003	Back up Cap. 8200μF/5.5 V	SB CAP==822=
C603,604	AVC 7700 132	Ceramic Cap. 22 pF/50 V	CC45==220(NPO) (Temp.)
C605	256 1034 089	Metalized Cap. 0.12μF/50 V	CF93A1H124J(ECQV)
C606	254 4305 939	Electrolytic 0.33 μF/50 V	CE04W1HR33M(SRA)
C607	AVC 7700 133	Ceramic Cap. 0.01μF/50 V	CK14==103AX
C608	254 4360 000	Electrolytic 220 μF/10 V	CE04W1A221M(SRA)

OTHER GROUP				Q'ty
	—	(P.W.Board)		(1)
X101	399 0041 008	Ceramic Resonator	4.00 MHz	1
CN006	AVC 7700 152	3 P Connector	L=300	1

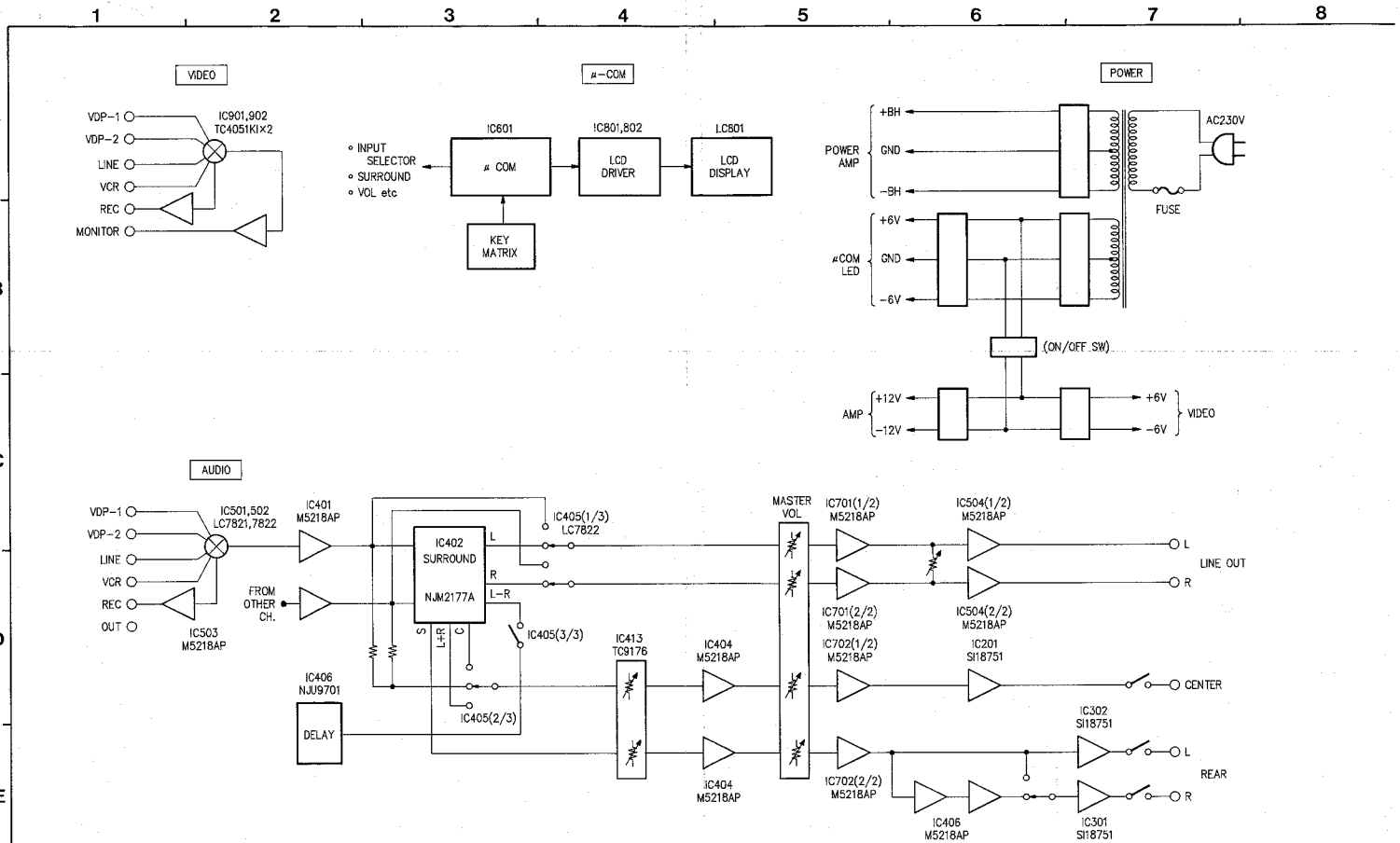
Ref. No.	Parts No.	Parts Name	Remarks	
CN004	AVC 7700 135	4 P Connector	L=150	1
CN007	AVC 7700 157		L=220	1
CN020	AVC 7700 139	5 P Connector	L=200	1
CN102	AVC 7700 158	6 P Connector	L=100	1
CN022	AVC 7700 134	12 P Connector	L=170	1
	AVC 7700 197	5 P Flat Wire	L=45	4

FRONT(LCD/KEY) UNIT

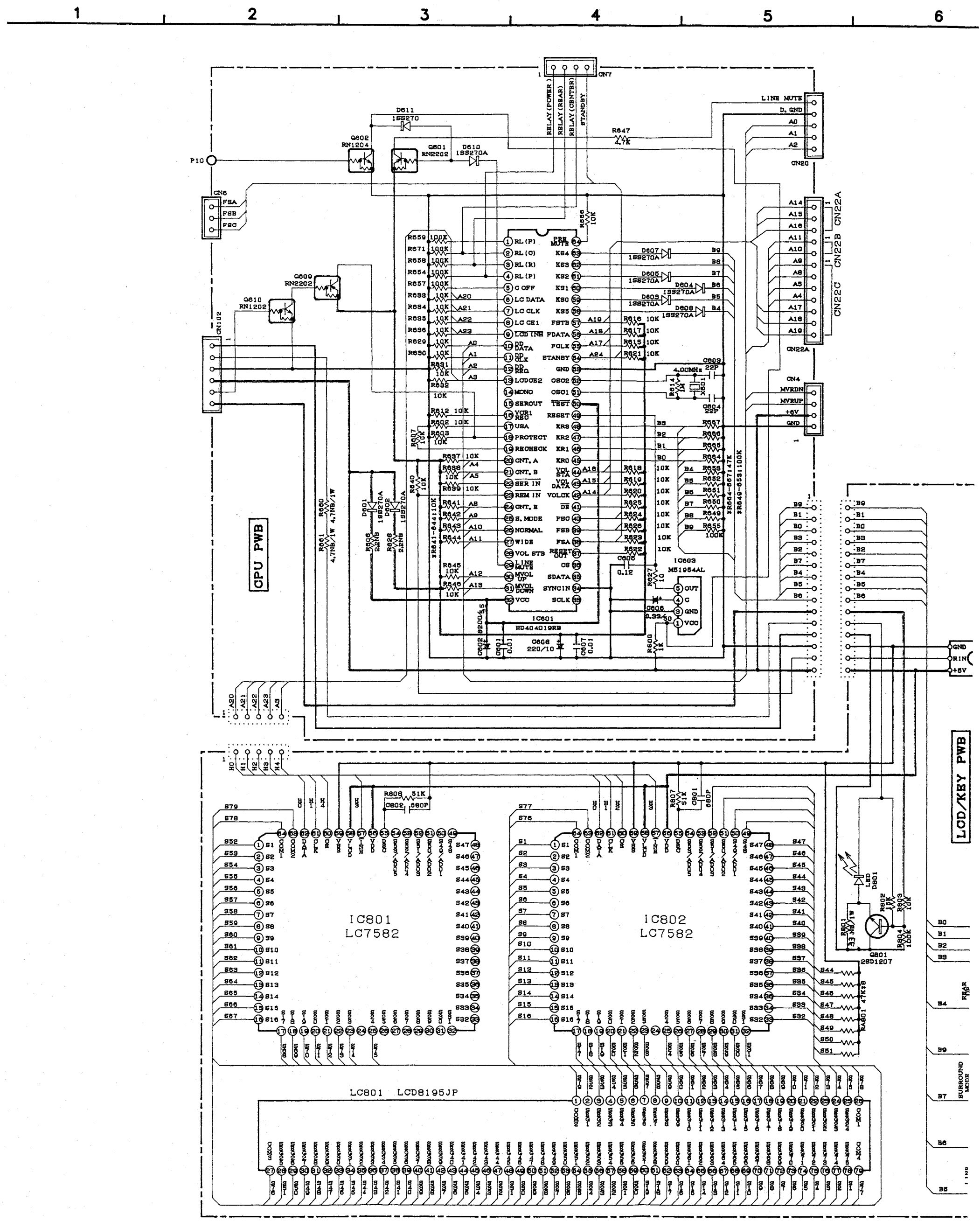
Ref. No.	Parts No.	Parts Name	Remarks
SEMICONDUCTORS GROUP			
IC801,802	263 0880 009	IC LC7582E	
Q801	274 0097 009	Transistor 2SD1207(T/S)	
D601	393 9470 009	LED Ass'y	
LC801	393 4121 007	LCD Ass'y (LCD8195 JP)	
	AVC 7700 140	Remocon Sensor	SPS-420-1
RESISTORS GROUP (Not included Carbon Film ±5%, 1/4W Type, Refer to the Schematic Diagram for those Parts.)			
R802	241 2401 033	Carbon Film 15kohm 1/6W	RD14B--153J(5)
R803	241 2400 995	Carbon Film 10kohm 1/6W	RD14B--103J(5)
R804	241 2403 934	Carbon Film 100kohm 1/6W	RD14B--104J(5)
R807,808	241 2402 061	Carbon Film 51kohm 1/6W	RD14B--513J(5)
⚠ R801	244 0023 001	Metal Oxide 33ohm 1W(NS)	RS14B3A330JNSF
RA801	AVC 7700 142	Resistor Array 47kohm x 8	RK99==473JP8
CAPACITORS GROUP			
C801,802	AVC 7700 141	Ceramic Cap. 680 pF/50 V	CK14==681AX

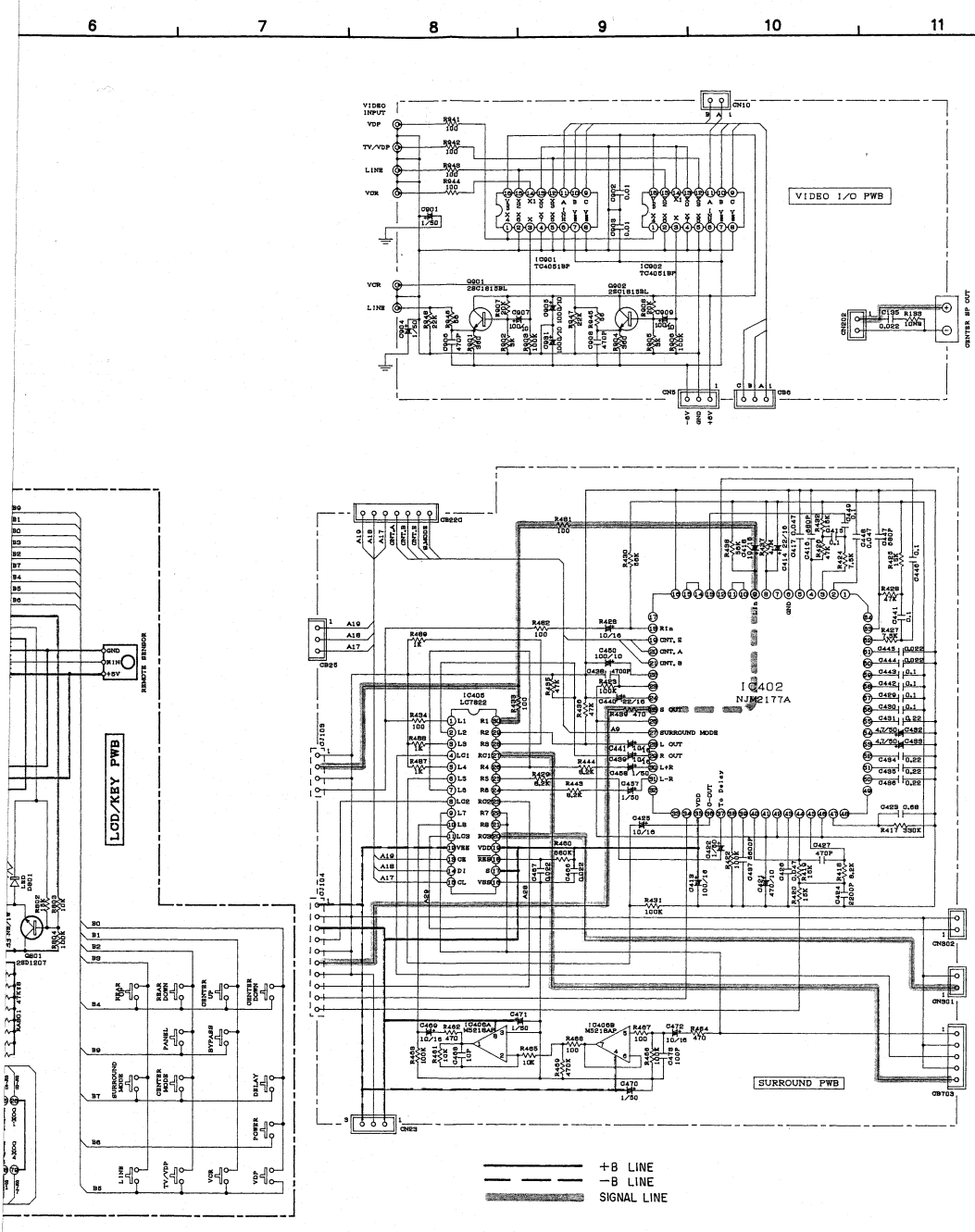
OTHER GROUP				Q'ty
	—	(P.W.Board)		(1)
	212 4388 004	Tact Switch(SKHHAJ)	H=4.3 mm	5
	212 5607 904	Tact Switch(SKHVBH024A)	H=9.5 mm	9

BLOCK DIAGRAM



SCHEMATIC DIAGRAM (1/2)



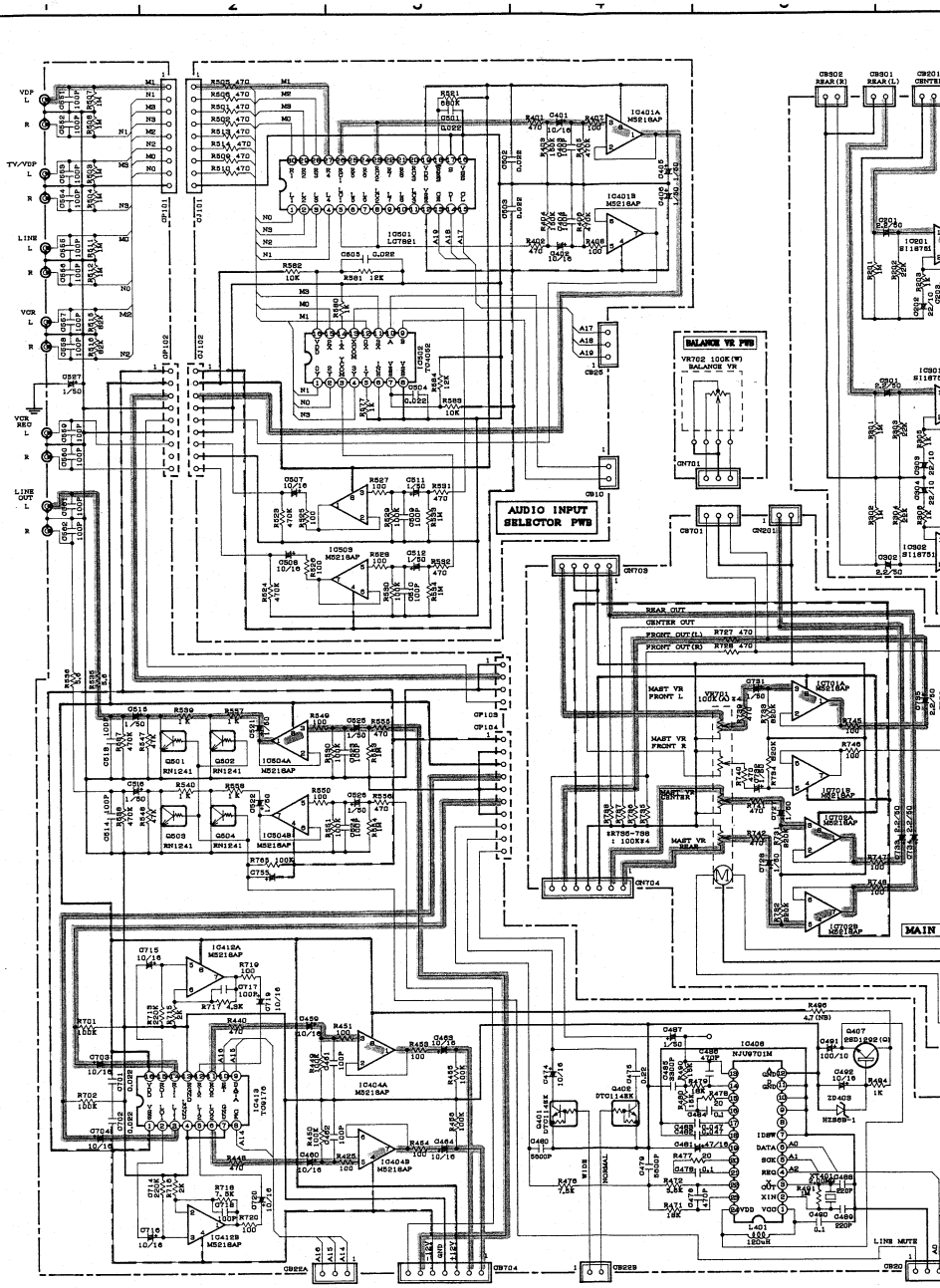


WARNING:
Parts marked with this symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

WARNING:
DO NOT return the unit to the customer until the problem is located and corrected.

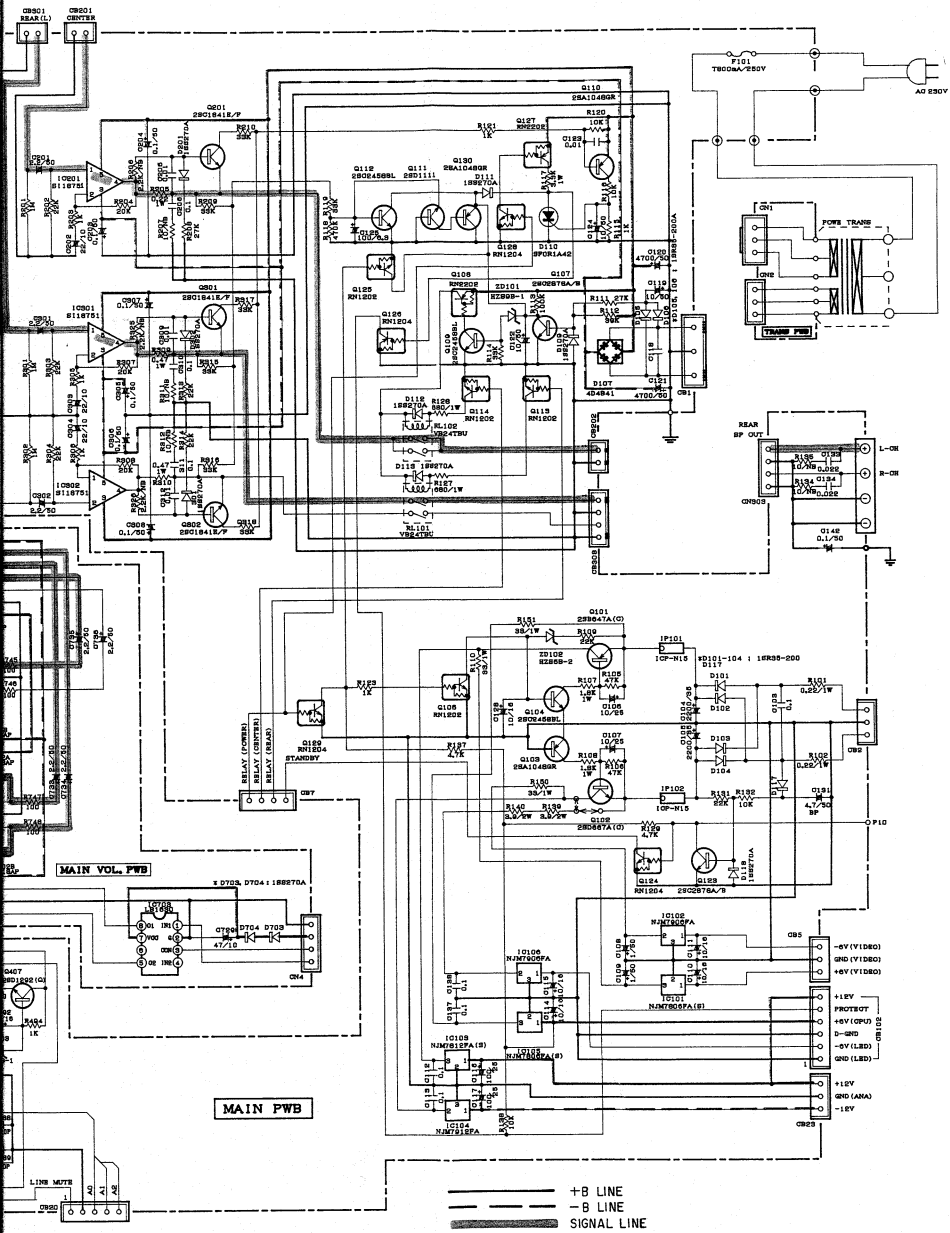
NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.



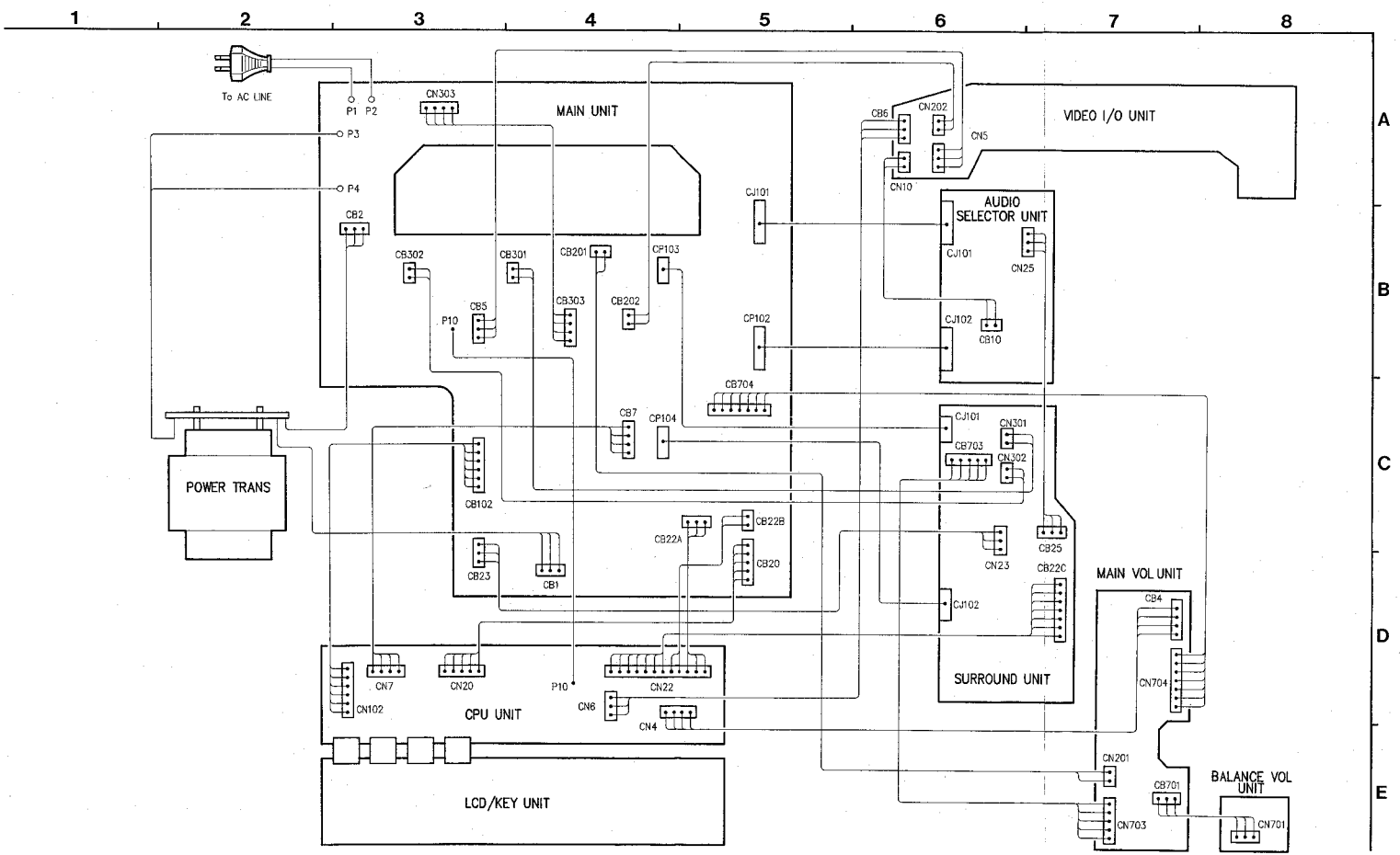
WARNING:
Parts marked with this symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

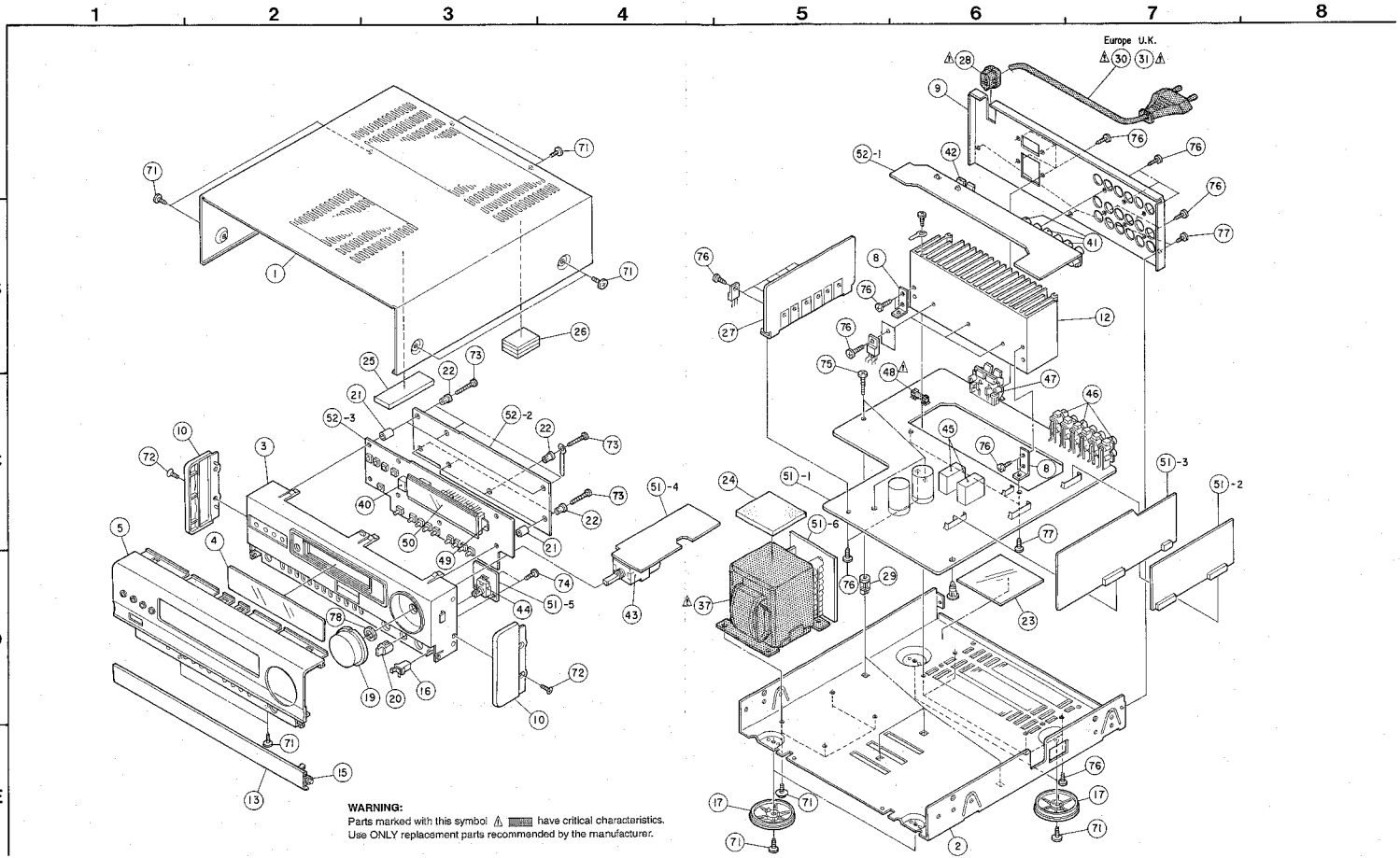
NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.


MAIN VOL. PWB
MAIN PWB
+B LINE
−B LINE
SIGNAL LINE

WIRING DIAGRAM



EXPLODED VIEW OF CHASSIS AND CABINET



PARTS LIST OF EXPLODED VIEW

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
◉ 1	102 0518 212	Top Cover		1
◉ 2	AVC 7700 101	Main Chassis		1
◉ 3	146 9281 304	Inner Panel		1
4	143 9156 003	Window		1
◉ 5	AVC 7700 103	Front Panel Ass'y		1
6	—	Front Panel		(1)
7	—	Knob Guide (Round)		(1)
8	AVC 7700 104	P.W.B. Bracket		2
◉ 9	AVC 7700 105	Rear Panel		1
10	146 1400 303	Side Plate		2
11	113 1549 002	Push Button (Round)		1
12	AVC 7700 106	Power Radiator		1
13	144 2216 202	Trap Door		1
14	401 0175 109	Hinge (L)		1
15	401 0176 108	Hinge (R)		1
16	435 0113 009	Push Latch		1
17	104 0237 201	Foot Ass'y		4
18	113 1460 000	Power Button		1
19	112 9095 102	Volume Knob Ass'y		1
20	112 0645 166	Knob		1
21	AVC 7700 107	Collar Bush (Long)		7
22	AVC 7700 108	Collar Bush (Small)		7
23	AVC 7700 109	Spacer	50x70xt0.3	1
24	AVC 7700 110	Spacer	40x60xt5	1
25	AVC 7700 111	Spacer	20x60xt5	1
26	AVC 7700 112	Spacer	20x30xt15	1
27	AVC 7700 102	Radiator Plate		1
⚠ 28	445 0056 008	Cord Bush		1
29	AVC 7700 113	P.C.B. Holder		3
⚠ 30	AVC 7700 301	AC Cord Ass'y	Europe model	1
⚠ 31	AVC 7700 201	AC Cord Ass'y	U.K. model	1
32	—	Cord Band	Black	1
★ 33	445 8004 007	Wire Clamp Band	L=100	13
34	—	Serial No. Label	Europe model	1
35	—	Serial No. Label	U.K. model	1
36	—	Fuse Label	T800 mA/250 V	1
⚠ 37	AVC 7700 115	Power Trans		1
★ 38	—	Cord Holder		1
39	—	Caution /Fuse Label		1
40	AVC 7700 140	Remocon Sensor	SPS-420-1	1
41	204 8360 001	2 P Pin Jack(S-GND)		3
42	205 0695 007	2 P Speaker Terminal	Red/Black	1
43	AVC 7700 160	Variable Resistor100kohm	Main	1
44	AVC 7700 161	Variable Resistor100kohm	Balance	1
45	214 0154 005	Relay VB24STB	or VB24SMB	2
46	204 8266 008	4 P Pin Jack(S-GND)		3
47	205 0592 029	4 P Speaker Terminal	Red/Black	1
⚠ 48	206 1031 018	Fuse 800 mA/250 V	20 mm	1
49	393 9470 009	LED Ass'y	D801	1
50	393 4121 007	LCD Ass'y (LCD8195JP)	LC801	1
◉ 51	AVC 7700 191	Main P.W.B. Unit Ass'y		1s
51-1	—	Main Unit		(1)
51-2	—	Audio Selector Unit		(1)
51-3	—	Surraund Unit		(1)
51-4	—	Main VR Unit		(1)
51-5	—	Balance VR Unit		(1)
51-6	—	Power Trans Unit		(1)

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
◉ 52	AVC 7700 192	Sub P.W.B. Unit Ass'y		1s
52-1	—	Video I/O Unit		(1)
52-2	—	CPU Unit		(1)
52-3	—	LCD/Key Unit		(1)
53				
54				
SCREWS				
71	AVC 7700 117	Tapping Screw 3x6	Black	12
72	AVC 7700 118	F.H. Tapping Screw 3x8		2
73	AVC 7700 119	Tapping Screw 2.6x20		7
74	AVC 7700 120	Bind Screw 2.6x8		2
75	AVC 7700 121	Bind Screw 3x18		3
76	DN8 2030 158	Bind Screw 3x8	Black	27
77	HMA 1000 129	Bind Screw 3x6	Black	10
78	HMA 5000 334	Nut M9 11xt2		1
79	AVC 7700 122	Bind Screw 2.6x6		1
80				
PACKING & ACCESSORIES				
101	503 1029 107	Cushion		1
102	503 1032 107	Top Cushion		1
◉ 103	AVC 7700 302	Carton Case	Europe model	1
	AVC 7700 202	Carton Case	U.K. model	1
◉ 104	AVC 7700 114	Top Plate	350x400	2
◉ 105	511 2622 009	Inst. Manual		1
106	505 0038 030	Envelope for Inst. Manual	230x340	1
107	505 0016 094	Envelope for Set	400x550	1
108	505 8014 030	Envelope for Cord Plug	200x300	1
109	—	Bar Cord Label	Europe model	1
	—	Bar Cord Label	U.K. model	1
110	AVC 7700 116	Cushion Plate	155x244xt24	1
111	399 0244 009	Remote Control	RC-178	1
112	—	Batteries	R6P/AA	(2)
113				

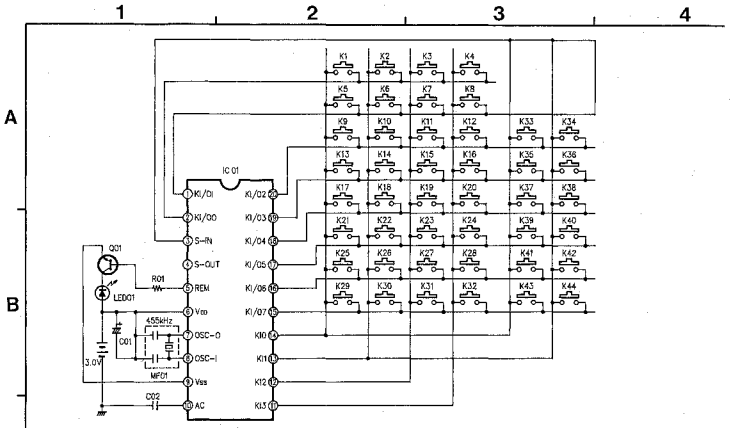
NOTE FOR PARTS LIST

- Part indicated with the mark " ◉ " are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/6W, 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:

Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

SCHEMATIC DIAGRAM (RC-178) PARTS No: 399 0244 009



SPECIFICATIONS

1. When each Key is pressed double transmission is not performed. When one side is released from double pressed state, transdmit code on unreleased side.

NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

REMOTE CONTROL UNIT ASS'Y

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC01	—	IC µPD6124ACS-004	µ-Com
Q01	—	Transistor 2SC3377 (Q/R)	
or	273 0195 908	Transistor 2SC2060 (Q/R)	
D01	—	LED SE303ARF-C	Infrared
or	—	LED STD1K10CXMLF28	Infrared
RESISTORS GROUP			
R01	241 2397 901	Carbon Resistor 220ohm, 1/10W	RD14B2E221J(S)
CAPACITORS GROUP			
C01	254 4213 021	Electrolytic 47µF/6.3V	CE04W0J470M
C02	253 1176 003	Ceramic 0.1µF/25V	CK45F1E104Z
OTHER GROUP			Q'ty
	—	(P.W. Board)	(1)
MF01	—	Ceramic Resonator	CSU455P 1
	—	Batteries	R6P/AA (2)

PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks	Q'ty
1		Case Top Ass'y		1
2		Panel		1
3		Switch Rubber		1
4	—	Case Bottom Ass'y		1
5	—	Cover Battery		1
6	—	Tapping Screw 2.6 × 12		1
7	—	Spring Coil	for +	1
8	—	Spring Coil	for –	1
9	—	Spring Coil	for Common	1
10	—	Poly Cover	85 × 250	1
11	—	P.W.B. Unit Ass'y		1 S

CORDS TABLE

KEY No.	System address C1	C2	C3	C4	C5	Custom code C6	C7	C8	C9	C10	C11	Extension C12	C13	Mask C14	Judgment K	Remarks	Item No.1 RC-178	Item No.2	Item No.3
1	0	1	0	0	0	1	0	0	0	0	0	1	1	0	0	POWER	O		
2	0	1	0	0	0	1	0	0	0	1	1	1	1	0	0	VOLUME UP	O		
3	0	1	0	0	0	0	1	0	0	1	1	1	1	0	0	VOLUME DOWN	O		
4	0	0	1	1	0	0	1	0	0	1	1	0	0	1	0	SLEEP			
5	0	1	0	0	0	0	0	0	0	1	1	1	1	0	0	MUTING			
6	0	0	1	1	0	1	1	1	1	1	0	1	0	0	0	FUNCTION (LINE)	O		
7	0	0	1	1	0	0	0	1	1	1	0	1	0	0	0	T.MONITOR			
8	0	0	1	1	0	1	0	0	1	1	0	1	0	0	0	TUNER			
9	0	0	1	0	0	0	0	1	1	1	0	1	0	0	0	F. PLAY 1 (▶)			
10	0	0	1	0	0	1	1	1	0	1	0	1	0	0	0	R. PLAY 1 (◀)			
11	0	0	1	0	0	0	1	1	0	1	0	1	0	0	0	FF 1 (▶▶)			
12	0	0	1	0	0	1	1	1	0	1	0	1	0	0	0	REW 1 (◀◀)			
13	0	0	1	0	0	1	1	1	1	1	0	1	0	0	0	REC/MUTE 1 (●)			
14	0	0	1	0	0	0	1	1	1	1	0	1	0	0	0	STOP 1 (■)			
15	0	0	1	0	0	1	1	1	0	1	0	1	0	0	0	SELECT A/B			
16																Not Transmission			
17	0	1	0	0	0	0	1	0	1	0	0	1	1	0	0	VDP-1	O		
18	0	1	0	0	0	1	1	0	1	0	0	1	1	0	0	VDP-2	O		
19	0	1	0	0	0	1	0	1	1	0	0	1	1	0	0	VCR-1 (VCR)	O		
20	0	1	0	0	0	0	1	1	1	0	0	1	1	0	0	VCR-2			
21	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	DBS			
22	0	1	0	0	0	1	0	0	1	0	0	1	1	0	0	TV			
23	0	1	0	0	0	1	1	1	0	0	1	1	1	0	0	BYPASS	O		
24	0	1	0	0	0	0	1	1	0	0	1	1	1	0	0	SURROUND MODE	O		
25	0	1	0	0	0	0	0	1	0	0	1	1	1	0	0	⊡ CENTER	O		
26	0	1	0	0	0	0	1	0	1	0	1	1	1	0	0	T. TONE	O		
27	0	1	0	0	0	1	1	0	1	0	1	1	1	0	0	3CH LOGIC			
28	0	1	0	0	0	1	1	0	0	1	1	1	1	0	0	REAR VOL. UP	O		
29	0	1	0	0	0	0	0	1	0	1	1	1	1	0	0	REAR VOL. DOWN	O		
30	0	1	0	0	0	1	0	1	0	1	1	1	1	0	0	CENTER VOL. UP	O		
31	0	1	0	0	0	0	1	1	0	1	1	1	1	0	0	CENTER VOL. DOWN	O		
32																Not Transmission			
33	0	0	0	1	0	1	1	1	0	1	0	1	0	0	0	DIRECT			
34	0	0	0	1	0	1	0	1	1	0	0	1	0	0	0	PROGRAM			
35	0	0	0	1	0	1	1	0	0	1	0	1	0	0	0	CANCEL			
36	0	0	0	1	0	0	1	0	1	0	1	1	1	0	0	SDB			
37	0	0	0	1	0	0	0	1	1	1	0	1	0	0	0	PLAY (▶)			
38	0	0	0	1	0	0	1	1	1	1	0	1	0	0	0	STOP (■)			
39	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	A-SEARCH (▶▶)			
40	0	0	0	1	0	1	0	0	1	1	0	1	0	0	0	A-SEARCH (◀◀)			
41	0	0	0	1	0	0	1	0	1	1	0	1	0	0	0	M-SEARCH (▶▶)			
42	0	0	0	1	0	1	1	0	1	1	0	1	0	0	0	M-SEARCH (◀◀)			
43	0	0	0	1	0	1	0	1	1	1	0	1	0	0	0	PAUSE (❙❙)			
44	0	0	0	1	0	1	1	1	0	1	0	1	1	0	0	DISC SKIP			

NOTE FOR PARTS LIST
- Part indicated with the mark " ◉ " are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "l" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.

WARNING:
Parts marked with this symbol ⚠ ▒▒ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.